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SELF-RETRACTABLE WRITING UTENSIL

FIELD OF THE INVENTION

[0001] This invention relates generally to a writing utensil such as ball pen or roller pen with a self-retractable device to protect the writing tip when it is not in use.

BACKGROUND OF THE INVENTION

[0002] Ball point pen or roller pen writing tip traditional are protected when it cap is in place, depressed a plunger at the end to retract the writing tip or twisting the outer casing to retract the writing tip. When you drop the writing utensil in a midst of using or when you forget to retract the writing tip during usage the writing tip are very vulnerable to damage.

[0003] To address this concern, design became available in which the writing utensil include a self retractable device located at the position where the most people hold the writing utensil to write. The writing tip will only be exposed when a person activate the self retractable device with the finger or thumb by depressing the actuator therefore allowing the person to write. Once the finger or thumb was to leave the actuator, the writing tip will retract back into the housing by itself thus keeping the writing tip protected. This will prevent the writing tip from being damage when you drop the writing utensil during use.



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BRIEF DESCRIPTION OF THE DRAWINGS

[0004] The Invention can best be understood with conjunction to the accompany drawings with the description of the embodiments correspond.

[0005] Figure 1 shows you the components that make up of the Self Retractable Writing Utensil. It consists of a Front End Cap (10), a Self Retractable Device, a Coiled Spring (20), a Writing Utensil Housing (50) and a Ball Point Pen or Roller Pen Refill (30).

[0006] Points of important for each component are specified in Figure 2.

The Front End Cap (10) has the recess (11) to retain the front end (21) of the Coiled Spring (20). The internal tread (12) is to fasten to the external tread (51) of the Ball Point Pen Body (50).

The Self Retractable Device consist of a Front Sleeve (41), Back Sleeve (42), Self Retractable Lever (43) and Actuator (44).

The Coiled Spring (20) consists of front end (21) and back end (22).

The Ball Point Pen or Roller Pen Refill with a permanent sleeve acting as a front stopper (31) and back stopper (32).

The Writing Utensil Housing having a external treaded end (51), a track (53) (which allows the Front Sleeve (41) and Back Sleeve (42) of the Self Retractable Device to glide), a track end (54) (to stop the Back Sleeve (42) from moving backward), an opening (55) with slope (52) (to allows the Actuator (44) to move downward and forward) and a valley (56) at the opening (55).

[0007] Figure 3 shows the assembled Self Retractable Writing Utensil.

DETAILED DESCRIPTION

[0008] Figure 4 shows the assembled Self Retractable Writing Utensil. Which consist of the following assembled components. The Self Retractable Device being assembled into the Writing Utensil Housing (50). The Back sleeve (42) is prevented from moving back when it reaches the end of the sliding track (54), The Actuator (44) protruding out of the Writing Utensil Housing (50) through a elongated opening (55) on the Writing Utensil Housing (50). The Ball Point Pen or Roller Pen Refill (30) is inserted through the Front sleeve (41) and Back sleeve (42) for the Self Retractable device. The Ball Point Pen or Roller Pen refill back stopper (32) will stop at the Front Sleeve (41) and the Coiled Spring (20) will be inserted to the front end of the Ball Point Pen or Roller Pen Refill (30). The Ball Pen Refill front stopper (31) will block the back end (22) of the Coiled spring (20).

The Front End Cap (10) is secured to the Writing Utensil Housing (50), the front end (11) of the Front End Cap (10) will prevent the Coiled Spring (20) from coming out of the Front End Cap (10).

[0009] Figure 5 shows how the Retractable Ball Point Pen functions when in use. When the Actuator (44) is being depressed by a finger or thumb, the Retractable Lever (43) is being straighten from its original state due to the vertical force. This vertical force is then transfer to a horizontal force. Because the Back Sleeve (42) is prevented from moving back thus only allows the Front Sleeve (41) to move forward. The Front Sleeve (41) pushes the Ball Point Pen or Roller Pen Refill (30) back stopper (32) and forces the Ball Point Pen or Roller Pen Refill (30) to move forward. As the Ball Point Pen or Roller Pen Refill (30) moves forward the Ball Point Pen or Roller Pen Refill (30) front end stopper (31) will compressed the Coiled Spring (20). This will allow the writing tip to protrude out of the Front End Cap (10) thus allowing you to start writing with the writing utensil.

[0010] Figure 6 shows how the Self Retractable Writing Utensil functions when not in use. When the finger or thumb leaves the Actuator (44) the Retractable Lever (43) and the Coiled Spring (20) will return back to its original state. This is due

to the Coiled Spring (20) front end (21) is stop by the Front End Cap Recess (11) and only allow the Coiled Spring (20) to push the Ball Point Pen or Roller Pen Refill back as the back end (22) of the Coiled Spring (20) pushes the front stopper (31) of the Ball Point Pen or Roller Pen Refill (22) due to it spring property. The Self Retractable lever will also spring back to push the Actuator (44) back to its original position. As this happens instantaneously when the finger or thumb leaves the Actuator (44) therefore the Ball Point Pen Refill retracted back into the Ball point Housing (50) by itself.

CLAIM

1. A writing utensil with a self retractable device is located where most people would hold the writing utensil during writing.
2. The self retractable device consists of two sleeves with hole in the middle for the refill to go through, a self retractable lever and an Actuator attached to the top of the self retractable lever.
3. The self retractable lever properties are can be formed and has a spring principle.
4. The writing utensil housing has a guiding track to perform as a path for the front sleeve to move and also a end to stop the back sleeve from moving back. The housing also has an opening on the track with a slope on the front to allow the Actuator to guide down and forward when it is depressed.
5. The ball point pen or roller pen refill has a permanent sleeve to act as a stopper for the coiled spring and the front sleeve of the self retractable device.