Dec. 6, 1966 A. J. TESSIER 3,289,637

WRITING INSTRUMENT

Filed Jan. 12, 1965

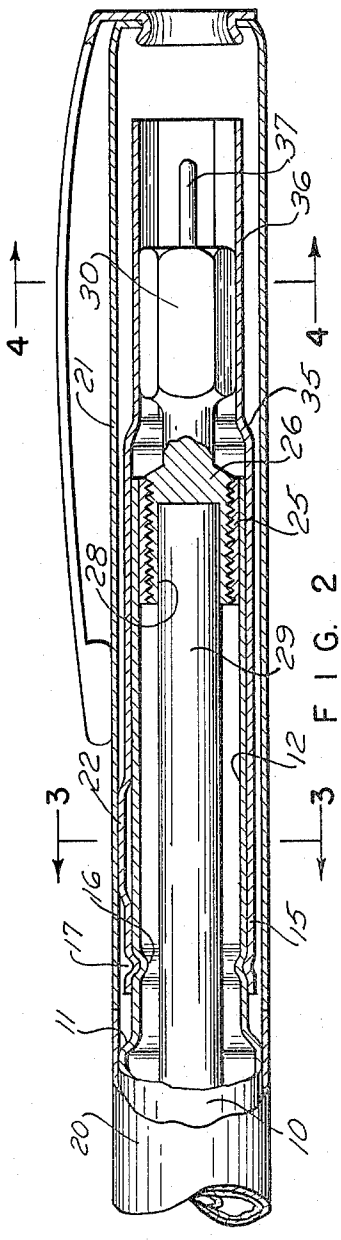


FIG. 2

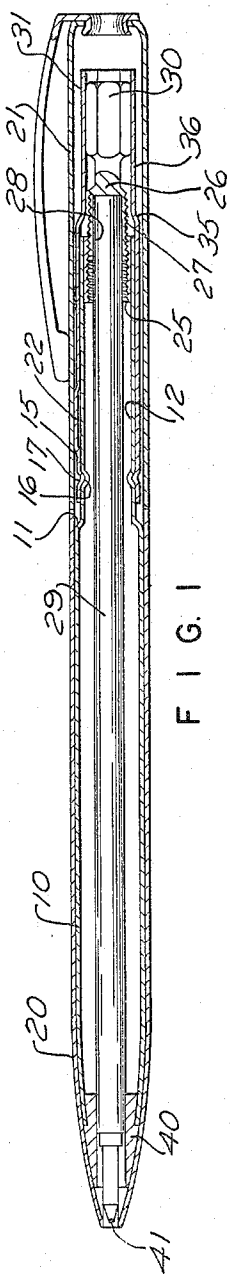


FIG. 1

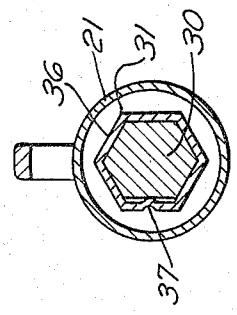


FIG. 4

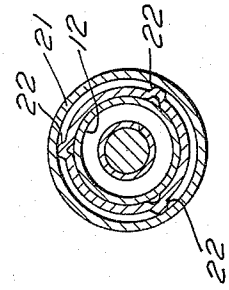


FIG. 3

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This invention relates to a writing instrument of the mechanical type in which a writing unit which may be either a ball point pen or a lead is moved in and out of a casing so as to retract the writing point into the casing so that it will not engage the clothing.

This invention is primarily concerned with the driving mechanism for the carrier of the writing unit, so that upon relative rotation in one direction of parts easily accessible to be engaged by the hands of the user the writing unit will be moved out of the casing into writing position whereas relative rotating movement in the opposite direction will axially move the writing unit into the casing in which it is mounted. Threading means are utilized for the axial movement of the writing unit carrier in moving it axially from retracted position to writing position or vice versa.

One of the objects of this invention is to provide parts which may be made in multiple by machine operations, such as screw machine operations, and which may be easily and simply assembled by a minimum of operations.

Another object of this invention is to provide an inexpensive and yet highly functional writing instrument which will be of sturdy construction.

Another object of this invention is to provide an arrangement so that the writing unit may be easily replaced when its writing means is exhausted.

With these and other objects in view, the invention consists of certain novel features of construction as will more fully be described and particularly pointed out in the appended claims.

In the accompanying drawings:

FIG. 1 is a section view of the writing instrument showing a writing unit as retracted into the instrument as it would be when placing the instrument in the pocket of the user;

FIG. 2 is a fragmental sectional view similar to FIG. 1 but on a larger scale with the unit in position for writing;

FIGS. 3 and 4 are sectional views on lines 3—3 and 4—4 of FIG. 2.

In proceeding with this invention, I have provided a pair of relatively rotating tubular sections which are telescoped together and through which the writing unit extends. In the inner one of these sections, there is provided a threaded bushing for engaging the threads of a carrier for the writing unit. This carrier is provided with a polygonal portion which affords a means for engaging and rotating it while also permitting an axial sliding movement to occur along this polygonal section. The engagement of this polygonal portion of the carrier is by a corresponding polygonal section on the outer of the tubular sections, which tubular section is driven by frictional engagement between it and the cap member of the casing which houses the actuating mechanism. The cap member may be removed for removing the carrier so as to replenish the writing unit should the same become exhausted.

With reference to the drawings, 10 designates a first tubular section which is of two diameters by reason of the inwardly offset portion 11 providing a smaller diameter portion 12.

The second tubular section 15 telescopes over the reduced portion 12 of the first tubular section and provides sufficient clearance so that it may be freely rotated about the first tubular section over which it telescopes. These two tubular sections are prevented from relative axial movement by being rolled inwardly as at 16 and 17. A casing having a forward portion 20 snugly engages the tubular section 10 so as to rotate therewith or provide a means for holding the tubular section 10 against rotation while a cap member 21 completes the casing and removably frictionally engages the outwardly extending ribs 22 of the tubular section 15 which are resiliently flexed inwardly by the cap member 21 so that when the cap member is rotated the tubular section 15 is rotated with it while the casing part 20 and the tubular section 10 are held against rotation. Thus relative rotation is imparted to the tubular sections by holding the casing number 20 and rotating the cap number 21.

At the rear end of the reduced portion 12 of the first tubular section, a bushing 25 with internal threads is fixedly mounted by friction within this rear end of the first tubular number. A carrier 26 having threads 27, threadedly engages this bushing by its external threads engaging the internal threads of the bushing. This carrier is provided with a recess 28 for receiving the writing unit 29 which frictionally engages the walls of this recess with sufficient friction so as to move back and forth with the carrier as the carrier is moved into or out of the bushing. The carrier is provided with a polygonal portion 30 which is here shown as hexagonal so as to provide corners such as 31 for driving the same.

The second tubular section 15 at its rear end is reduced at offset 35 providing a reduced portion 36 which is of the corresponding polygonal shape here shown as hexagonal to slidably fit the hexagonal cross section of the carrier portion 30. Thus as rotation relative to the first tubular section 10, 12 is imparted to the second tubular section 15, the carrier will be rotated so that its threads will move it axially of the tubular sections 10 and 15 while it will slide along the hexagonal portion 36 of the tubular section 15, thus advancing the carrier and the writing unit 29 or retracting it depending upon the direction of relative movement to move the writing unit into or out of the casing portion 20.

The writing unit may be guided at its forward end through bushing 40 fixed in casing 20 with which it has sliding engagement. In the particular showing here, a ball point 41 is located at the end of the writing unit or inking carrying portion 29.

A detent 37 is provided in the hexagonal portion 36 so as to apply sufficient friction on the hexagonal portion 30 of the carrier to prevent writing pressure on the writing unit from causing retraction of the unit and its carrier into the casing.

For removal of the carrier after the cap is removed, it is merely necessary to rotate the tube 15 with reference to the tube 10 or its casing 20 so as to back the carrier out of the threaded portion when it may be withdrawn and the writing unit replaced in the carrier.

I claim:

1. In a writing instrument, a writing unit, a pair of relatively rotatable tubular sections embracing said unit, a carrier for said unit having threads along one portion and a polygonal section along another portion thereof, a first one of said sections having threads engaging the threads of said carrier, and a second of said sections having a mating polygonal section engaging the polygonal section of said carrier whereby rotation relative to said second section is prevented but sliding movement of the carrier is permitted so as to axially move said unit through said sections as rotative relative movement of the sections occurs and detent means on said second tubular section to

friction said sliding axial movement of the carrier in the polygonal portion of the tube section.

2. In a writing instrument as in claim 1 wherein a casing member engages one section and a cap casing member frictionally removably engages the other of said sections by which relative rotation of the casing members causes relative rotation of the tubular sections to occur.

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