

[54] **WRITING IMPLEMENTS**

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[57] **ABSTRACT**

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Combination of ball point pen at one end of an elongated body and sharpened lead pencil at another end, the lead being in sharpened cartridge form storable in the body.

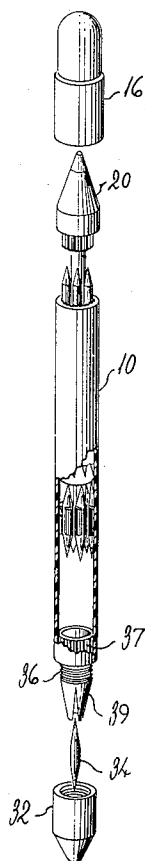
[58] Field of Search ..... 401/16, 17, 19-21,  
401/34, 56, 57, 52

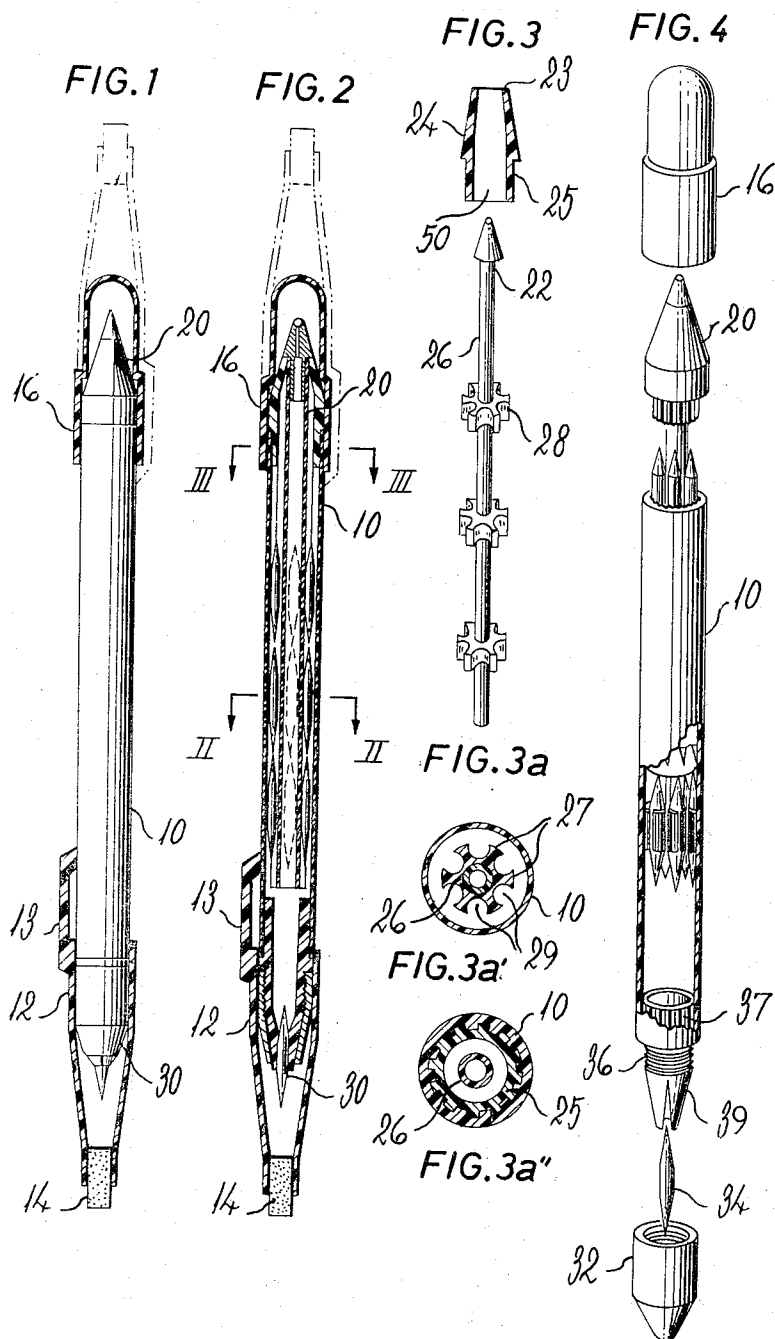
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**7 Claims, 7 Drawing Figures**

**UNITED STATES PATENTS**

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## WRITING IMPLEMENTS

### BACKGROUND OF INVENTION

This invention relates to a novel and useful writing implement, more particularly to an improved writing implement which possess the writing functions of those of ball point pens and pencils.

Conventionally, writing implements are limited to only one kind of writing function, namely, lead or ink. Any one of these cannot satisfy both writing function, and hence is disadvantageous.

### SUMMARY OF INVENTION

This invention encompasses a writing implement comprising substantially a tubular casing with ball point pen writing means and lead cartridge writing means detachably secured at each end, respectively. A plurality of lead cartridges for replacement of worn lead, are removeably received beforehand within gaps of clamps formed on a central tube of the ball point pen writing means. Caps are disposed at both ends of the casing. Each lead cartridge is sharpened at both ends so that the replacement of the blunt one will be ready to use.

### BRIEF DESCRIPTION OF DRAWING

FIG. 1 is a perspective view of one embodiment of the invention;

FIG. 2 is a vertical longitudinal view in section of the embodiment of FIG. 1;

FIG. 3 is a cross sectional view of the hood;

FIG. 3a is an exploded pictorial view of the ball pen elements.

FIG. 3a' and FIG. 3a'' depict cross sectional views taken along II—II and III—III of FIG. 2, respectively.

FIG. 4 is an exploded pictorial view of the lead writing means portion of the embodiment.

### DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

Referring to FIGS. 1 and 2, the writing implement of this invention, comprises substantially a tubular casing 10 of plastic or other suitable material in any geometric configuration, such as octagonal or circular. At one end of casing 10 is a detachable ball pen writing means 20 and at the other end a lead writing means 30. Caps 12, 16 are employed as usual to cover both writing means. Cap 12 is shaped to have an additional integrally formed holder 13 similar to any conventional writing implement. An eraser 14 may be fastened to cap 12. Cap 12 may also be placed upon cap 16 whenever pencil writing is desired.

The ball pen writing means 20, as shown in FIG. 3a, constitutes a conical shaped ball pen tip 22, a hood segment 24, a single length of ink containing tube cylinder 26 and a plurality of clamp sets 28 integrally formed around the outer periphery of tube 26 at predetermined locations thereon. After inserting tip 22 at one end, tube 26, together with tip 22 are passed through central passageway 50 provided within hood segment 24. The diameter of central passageway 50 at the upper end 23 is approximately the same as that of the conical shaped tip 22, such that retraction of hood segment 24 from tip 22 is less likely.

Tube 26 may be made of plastic material with colorless plastic being most preferable. It can be extruded by use of a mold, in a known manner, with the plurality of clamp sets 28 integrally formed upon its periphery. Al-

though three sets of clamps are shown in this embodiment, the exact number of clamp sets is not essential and the number can be varied with length of tube 26, space defined by casing 10 and tube 26.

For the sake of detailed illustration, the clamp set is shown in another cross sectional view in FIG. 3a'. Each clamp set 26 has 6 clamps 27 and 6 carrier spaces 29. In order to take effective advantage of the limited carrier spaces within the case 10, each one of the lead writing means is presharpener at both ends.

The hood segment 24 is provided with longitudinal slots at section 25 while the corresponding length of the inner wall of casing 10 is also formed opposite the longitudinal slots so that the ball pen writing means 20 can be easily inserted and removed as shown in FIG. 3a''.

FIG. 4 depicts construction details of lead writing means 30, which comprises a hood segment 32 and a reception segment 36. Reception segment 36 is formed into a plurality of longitudinal slots 37 at one end to a certain length in order to detachably plug into casing 10. The inner wall of casing 10 is correspondingly formed with opposite slots. Thus reception segment 36 of lead writing means 30 will fit tightly together in casing 10.

The reception segment 36 is divided into pinch clamps, preferably into three pieces, at the end portion to permit the insertion of the lead writing means. Screw threads are formed at the middle part of the reception segment. Screw threads are correspondingly located in the inner wall of the hood segment 32. Hood segment 32 will thus tightly engage the reception segment 36 and in turn clamp the lead writing means positioned within the pinch clamps. The lead writing means is perfectly clamped so that the retraction of the writing means during writing is impossible.

When writing is desired, either the cap 12 or 16 is removed and then the removed cap may be placed upon the other. Cap 12 having eraser 14 and holder 13 is preferably located at the exterior so that the eraser 14 is always ready for use. In case the lead writing means is worn out, it may be changed by detaching the ball pen writing means from the case 10, then taking out from the holder a new lead writing means and replacing the worn pencil lead with the new lead writing means.

This invention may be embodied in other specific modifications without departing from the spirit or essential scope thereof. The present embodiments are to be considered to be illustrative and not restrictive. All changes which come within the meaning and range of equivalents of the appended claims are intended to be embraced therein.

What is claimed is:

1. A writing implement comprising a tubular casing, ball pen writing means detachably engaged into one end of said casing, lead writing means detachably engaged into the other end of said casing, said ball pen having a tube insertable in said casing, said support means formed on said tube, a plurality of lead writing means held by said supporting means, a first clamp means engageable with said casing and for holding said lead writing means and a second means for closing said clamp means thereby to hold said lead writing means firmly for writing use, and caps provided at both said ends.

2. Writing implement of claim 1, wherein said casing has slots in the inner wall thereof shaped to hold said tube and said support means with said lead writing means contained therein.

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3. Writing implement of claim 1, wherein said lead writing means are sharpened at both ends thereof.

4. Writing implement of claim 1, wherein said support means comprises a plurality of sets of clamps, said clamps being useable for holding said writing means.

5. Writing implement of claim 4, wherein said clamp

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sets are integrally formed upon said tube.

6. Writing implement of claim 4, wherein said sets of clamps each has a plurality of clamps.

7. Writing implement of claim 1, wherein said caps are shaped to be engageable with one another.

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