

Nov. 3, 1970

FUMIKO SAKAMOTO

3,537,799

MECHANICAL PENCIL

Filed Dec. 11, 1968

3 Sheets-Sheet 1

Fig. 1.

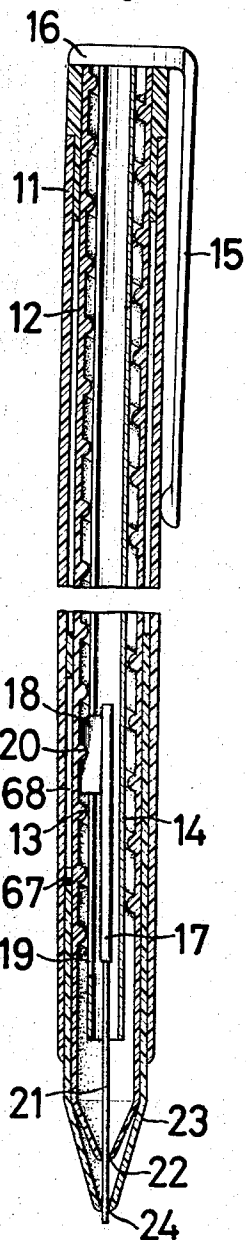
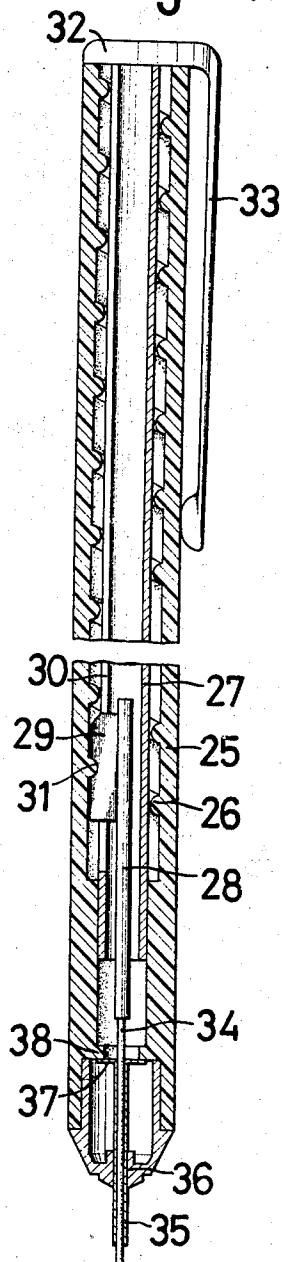


Fig. 2.



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Fig. 3.

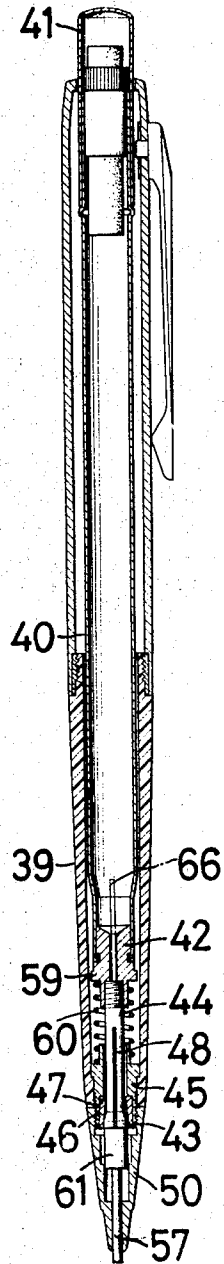
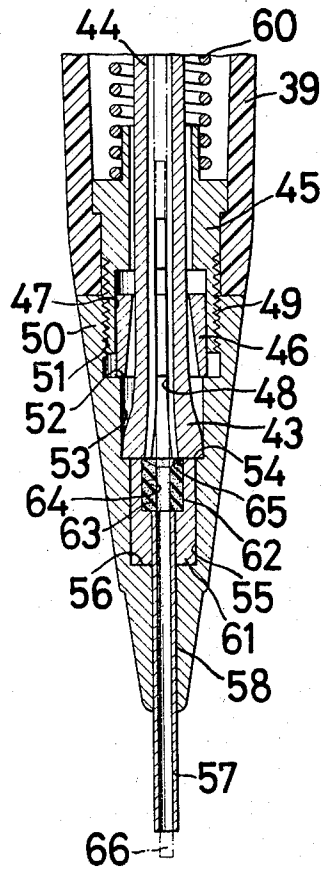


Fig. 4.



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Fig. 5.

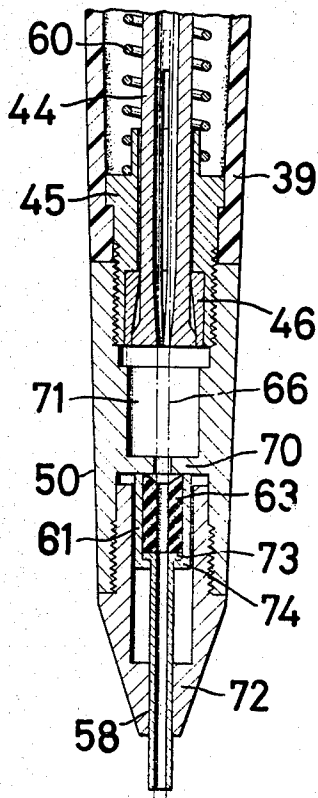


Fig. 6.

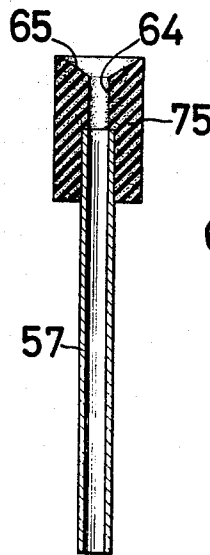
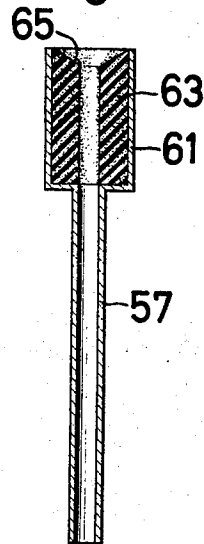


Fig. 7.



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**MECHANICAL PENCIL**

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42/106,817; Sept. 4, 1968, 43/76,409; Nov. 5,  
1968, 43/96,382

Int. Cl. B43k 21/16, 21/08

U.S. Cl. 401-67

11 Claims

**ABSTRACT OF THE DISCLOSURE**

An automatic pencil having a body with a lead extending device therein. A lead protecting element is slidably mounted on the lower part of the body, and it covers the outside of the lead which protrudes from the pencil body. The lead protecting element is retracted as the lead is worn away during writing.

The invention relates to mechanical pencils, more particularly to mechanical pencils which can be conveniently used for a long period of time without effecting any lead extruding operation in the course of writing by increasing the protruding amount of the lead.

The conventional mechanical pencils have to be used with the lead protruding very slightly, the lead being apt to be broken if extruded too long from the front end of the pencil holder. Such pencils therefore had a defect in respect that they involved the trouble of frequently repeating the lead extruding operation in the course of writing, the lead wearing very soon making it impossible to continue writing for a long period of time.

The object of the invention consists in providing improved mechanical pencils, wherein not only the foregoing defect of the conventional pencils have been removed but the construction has been simplified and the production cost has been reduced. The foregoing object is attainable by the shape, the combination and the operation of each part constituting the invention, and the embodiments thereof will be illustrated by the detailed description to be set forth hereinafter with reference to the accompanying drawing. Besides, changes and modifications in respect to the details of the construction are to be included in the claims which will appear hereinafter.

FIG. 1 is a longitudinally sectional elevation with omission in part showing the first embodiment of a mechanical pencil according to the invention. FIG. 2 is a longitudinally sectional elevation with omission in part showing the second embodiment of a mechanical pencil of the invention. FIG. 3 is a longitudinally sectional elevation with omission in part showing the third embodiment of the invention. FIG. 4 is a longitudinal section showing the essential part of FIG. 3 on an enlarged scale. FIG. 5 is a longitudinal section showing another form similar to the portion shown in FIG. 4. FIGS. 6 and 7 are longitudinal sections each showing further forms of the lead protective pipe.

The pencil according to the invention comprises a fistulous pencil holder having a built-in lead extruding contrivance and a lead protective pipe or sleeve protecting the lead against breakage by fitting to the outside of the lead which advances from the lower terminal part of the pencil holder.

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With reference to FIG. 1, the numeral 11 is an external tube, 12 is the body of the pencil holder fitted inside the said tube 11, a helical ridge 13 being formed on the inside thereof. The numeral 14 is a guide tube fitted inside the body of the pencil holder 12, the said tube 14 being revolvable against the body of the pencil holder, a head 16 having a clip 15 being fixed to the upper end of the guide tube 14, the said head 16 covering the top of the body of the pencil holder 12, a pin being provided outside the body 12.

Into the foregoing guide tube 14 is slidably fitted a lead holding pipe or sleeve 17, a protuberant piece 18 erected on the outside of the said holding pipe 17 being slidably fitted into a longitudinal split 19 provided along the guide tube 14 and protruding to the outside of the guide tube 14, a notch 20 provided on the outside of the said protuberant piece 18 slidably engaging the foregoing helical ridge 13.

It is so arranged that the upper end of the pencil lead 21 is fitted into the lower end of the foregoing lead holding pipe 17 more or less tightly, the said lead 21 protruding from a hole 22 at the lower end of the body of the pencil holder 12.

The numeral 23 is the lead protective pipe sleeve or, the lower part thereof being slenderly tapered, the lower end thereof being provided with a hole 24 through which to advance the lead 21, the upper part of the protective pipe 23 being slidably fitted into the space between the external tube 11 and the body of the pencil holder 12. On said lead protective pipe 23 is provided a longitudinally oblong hole 68, into which the foregoing pin 67 being inserted.

In the foregoing pencil, if the guide tube 14 is revolved, holding the said tube 14 so as not to allow it to move axially against the external tube 11 as well as the body of the pencil holder 12, the protuberant piece 18 of the lead holding pipe 17 which revolves together with the said tube 14 moving axially with the notch 20 thereof kept sliding on the helical ridge 13, thereby causing the lead 21 at its front end to protrude from the hole 22. Then it is so arranged that the front end of the lead 21 is slightly ahead of the hole 24 by pulling out the protective pipe 23 in the state wherein the lead 21 is considerably protruding through the holes 22, 24 as shown in FIG. 1.

In case writing is effected, holding the external tube 11 in the foregoing state, the lead protected by the protective pipe 23 is never broken even when latitudinal pressure is applied to the lead 21.

Further, according as the lead 21 is worn in the course of writing, the protective pipe 23 retreats, as a result of which writing is never hampered by the protective pipe 23. When the protective pipe 23 is found to be unable to retreat any longer in the course of writing, the lead 21 is caused to protrude long by effecting the lead extruding operation, then writing is resumable after covering the lead 21 with the protective pipe 23. Accordingly, no lead extruding operation is necessitated until the long extruded lead is worn out again.

In the embodiment illustrated in FIG. 2, a helical ridge 26 is formed directly on the inside of the body of the pencil holding body 25. The numeral 27 is a guide tube. A protuberant piece 29 provided on a lead holding pipe 28 which is slidably fitted into the said guide tube 27 protrudes through a longitudinal split 30 on the guide tube 27, a notch 31 of the protuberant piece 29 engaging the

helical ridge 26, the construction being same as that shown in FIG. 1. If the body of the pencil holder 25 is revolved against the guide tube 27 by holding the head 32 equipped with a clip 33 which is fixed to the top of the guide tube 27, covering the upper end of the body 25, or if the guide tube 27 is revolved against the body 25, the lead holding pipe 28 makes a reciprocating movement together with the lead 34.

In this embodiment the lead holding pipe 35 is a slender pipe slidably fitted into a hole 36 at the front end of the terminal part of the pencil holder which is fixed to the lower end of the body of the pencil holder 25, a flange 37 at the upper end of the said pipe 35 being so arranged as to hit an internal protruding edge 38 at the lower end inside the body of the pencil holder 25.

In this embodiment too, the same effect as that of the first embodiment is obtainable if writing is effected by extruding the lead 34 long as well as pulling out the protective pipe 35 until the end of the lead 34 protrudes slightly further than the end of the said pipe 35. However, the protective pipe 35 in this embodiment has an advantage in that the portion where writing is being effected is more easily visible, the lead protective pipe 35 being slender.

In the embodiments shown in FIGS. 3 and 4, the lead extruding device, the lead protective sleeve and the like are different from the case of the embodiments described heretofore.

For instance, in FIGS. 3 and 4 the numeral 39 is the body of a fistulous pencil holder and 40 is a lead storing tube reciprocably fitted inside the said body 40. To the upper end of the storing tube 40 is detachably fitted a lid 41, the upper end thereof protruding further than the upper end of the body 39.

To the lower end of the foregoing storing tube 40 is fixed a terminal metal piece 42, the upper end of a lead guide tube 44 which has a chuck 43 at the lower end thereof being screwed into the said metal piece 42. The lead guide pipe 44 is slidably fitted to a receiving tube 45 mounted at the lower end of the body 39, a sliding tube 46 fitted to the outside of the chuck 43 being so arranged as to detachably fit a recess 47 formed at the lower part of the receiving tube 45.

The chuck 43 is tapered outward on its outside, a plurality of splits 48 extending from the lower end thereof halfway up the guide pipe 44 enabling the chuck 43 to open or shut, with the result that the chuck 43 is expanded in its free state enabling the lead to pass freely through the inside of the chuck 43, while the chuck 43 grips the lead inside thereof in the state wherein the external periphery of the chuck 43 is pressed and constricted by the tapered internal periphery of the sliding tube or collar 46 as said sliding tube 46 covers the outside of the chuck 43.

Furthermore, between the flange 59 of the foregoing terminal metal piece 42 and the receiving tube 45 is fitted a spring 60 which is constantly pushing up the storing tube 40. From the lower end of the body 39 protrudes the lower half of said receiving tube 45, having a male screw thread 49 formed on the outside thereof, a female screw at the upper part of the inside of the terminal member 50 engaging the said male screw 49, thereby connecting the body 39 and the terminal member 50 together. On the inside of the terminal member 50 an internal peripheral wall 53 which has a smaller diameter than that of the female screw 51 is formed below the step 52 at the lower end of the female screw 51, an internal peripheral wall 55 of a still smaller diameter being formed below the step 54 at the lower end of the said internal peripheral wall 53, a hole 58 wherein the lead protective sleeve 57 is to be slidably fitted being provided at the center of the step 56 at the lower end of the said internal peripheral wall 55. The steps 52, 54 and 56 each constitute stop shoulder means.

The diameter of the foregoing internal peripheral wall

53 is small than the external diameter of the sliding tube 46 and larger than that of the chuck 43 in its expanded state.

The upper end of the foregoing lead protective sleeve 57 is tightly fitted into a tubular part of a larger diameter 61. The said tubular part 61 has a diameter corresponding to the internal peripheral wall 55, a recess 62 of a larger diameter than that of the protective sleeve 57 being provided at the upper end of the said tubular part 61, a tube 63 consisting of elastic material, such as rubber and the like, being tightly fitted into the recess 62. The hole 64 of the said tube 63 is so arranged as to be slightly smaller than the external diameter of the lead 66, so that the lead passing there will receive some resistance. Besides, a tapered part 65 is formed at the upper end of the hole 64 so as to facilitate the entry of the lead 66 into the hole 64. Further, it is so arranged that the internal diameter of the protective sleeve 57 is such as will allow the lead 66 to pass easily without resistance, the relation between the protective pipe 57 and the hole 58 also being such as will allow both the said members to slide freely on each other.

In the foregoing embodiment, a number of pieces of lead which have been put into the storing tube 40 by removing the lid 41 enter one by one the terminal metal piece 42 and then the lead guide pipe 44. However, in the state as shown in FIG. 3, the lead never reaches the inside of the chuck 43, the chuck 43 being closed. If in this state the storing tube 40 is pressed down against the resistance of the spring 60 by pressing the lid 41 at the upper end of the storing tube 40 which protrudes from the top of the body 39, the chuck 43 at the lower end of the lead guide tube 44 descends together with the sliding tube 46. The descent of the sliding tube 46 is arrested soon when the said tube 46 hits the shoulder stop 52. However, the chuck 43 descends inside the internal peripheral wall 53 without hitting the stop 52, as a result of which the chuck 43, disengaged from the sliding tube 46, expands owing to its own elasticity as shown in FIG. 4. Consequently, the lead 66 passes through the inside of the chuck 43 until the lead 66 stops, hitting the tapered part 65 at the upper end of the tube 63. Then, if the pressure is removed from the lid 41, the storing tube 40 ascends owing to the elasticity of the spring 60, the chuck 43 ascending, leaving the lead 66 behind, the sliding collar or tube 46 fitting into the recess 47, the chuck 43 being constricted as the chuck 43 is pulled into the sliding tube 46, thereby gripping the lead 66.

Then, if the lid 41 is pressed down once again, the chuck 43 descends, gripping the lead 66, and forces the lead 66 into the hole 64 from the tapered part 65 despite some resistance, the sliding tube 46 hitting the step 52, the chuck 43 expanding as it descends. Then, if the pressure is removed from the lid 41, the chuck 43 ascends in an expanded state, leaving the lead behind, until the chuck 43 closes, drawn up inside the sliding tube 46. As described above, the lead 66 advances by a certain fixed length at each reciprocating movement of the storing tube 40, the length of each advance being equal to the distance from the position of the sliding tube 46 in FIG. 3 up to the position wherein the said tube 46 hits the stop 52, i.e. the reciprocating length of the sliding tube 46 defines the protruding length of the lead at each operation of the storing tube 40.

Further, when the front end of the lead protective sleeve 57 is slightly protruding beyond the front end of the terminal member 50, the tubular part of a larger diameter 61 at the upper end of the protective sleeve 57 is in contact with the lower end of the chuck 43 which is positioned above, and therefore as soon as the lead extruding operation is started by pressing down the storing tube 40, the tubular part of a larger diameter 61 is pressed down by the descending chuck 43, with

the result that the protective sleeve 57 protrudes further than the terminal member 50 as shown in FIG. 4. However, since the advancing length of the lead 66 at each reciprocation of the storing tube 40 is short, it is after several reciprocations of the storing tube 40 that the front end of the lead 66 protrudes slightly beyond the front end of the protective sleeve 57.

If the storing tube 40 is caused to ascend after the lower end of the lead 66 protrudes from the lower end of the protective sleeve 57, the lead 66 is gripped firmly by the chuck 43 to preclude retreating responsive to the writing pressure.

If writing is continued in this state, the protective sleeve 57 retreats accordingly upon engagement with a writing surface as the lead 66 is worn, never hampering the writing. And even when the lead 66 is protruding long, the lead 66 is protected against breakage by the protective sleeve 57, enabling to continue writing for a long period of time without the trouble of extruding the lead frequently in the course of writing.

When the protective sleeve 57 retreats owing to the wear of the lead 66 in the course of writing, the front end of the lead 66 still reaches the front end of the protective sleeve 57, and hence the lead 66 can be extruded long enough together with the protective sleeve 57 by a single reciprocation of the storing tube 40 this time.

In this occasion, the front end of the lead 66 is in the state of only appreciably showing from the front end of the protective sleeve 57, and therefore in case the storing tube 40 is further operated in the hope of extruding the lead 66 longer, if the advancing length of the lead 66 is arranged very long at one operation of the storing tube 40, the protrusion of the lead 66 from the front end of the protective sleeve 57 will be too great, resulting in breakage of the lead 66. In the case of this embodiment, however, the advancing length of the lead 66 at each operation of the storing tube 40 is shortened by reducing the reciprocating distance of the sliding tube 46, the lead 66 is thereby economically protected against breakage owing to the foregoing overprotrusion.

Furthermore, if the storing tube 40 is pressed down when the protective sleeve 57 is retracted as described above, the front end of the chuck 43 presses the tubular part of a larger diameter 61 of the protective sleeve 57, thereby causing said sleeve 57 to fully protrude, as a result of which there is no necessity of pulling out the said sleeve 57 by hand, the lead extruding operation being practicable by one hand. Since it is no longer necessary to provide the front end of the protective sleeve 57 with any protrusion which is wasteful unless for the convenience of manually pulling out the protective sleeve 57, it can be so arranged that the front end of the protective sleeve 57 scarcely protrudes when the said sleeve 57 is retracted to the innermost position.

Moreover, even when the lead 66 is perchance broken and stuck inside the tube 63 in this embodiment, disassembling is easily practicable by taking out the protecting sleeve 57, the tubular part of a larger diameter 61, the tube 63, etc. after detaching the terminal member 50 from the body 39, cleaning or the like being thus greatly facilitated.

Further, the device has the advantage of preventing the lead 66 from slipping out of the protective sleeve 57 owing to its own weight even when the chuck 43 expands and loses its grip on the lead 66, the lead 66 being fitted into the tube 63 with some resistance, and also another advantage in the respect that the protective sleeve 57 is no encumbrance at all in the course of writing, the said sleeve 57 being prevented from slipping off even when detached from the surface of paper.

As to the embodiment shown in FIG. 5, both the construction and function thereof are substantially same as in the case of the embodiment shown in FIGS. 3 and 4,

and hence the different points alone will be set forth hereinunder, omitting the description by only marking the same parts with the same numerals as FIG. 4.

In this embodiment a partitive wall 70 is provided halfway up the inside of the terminal member 50, a penetrating hole 71 being provided at its center, it being so arranged that the lead 66 will pass through the said hole 71, the sliding tube 46 hitting the partitive wall 70.

Furthermore, a still smaller terminal member 72 is screwed into the lower end of the terminal member 50, a hole 58 being provided therein.

Further, a flange 73 is provided at the upper end of the protective sleeve 57, the said flange 73 being engaged with an internal protruding edge 74 at the lower end of the tubular part of a larger diameter 61, both the members being pressed by a tube 63.

FIGS. 6 and 7 are different embodiments of the lead protective sleeve 57, respectively. FIG. 6 shows an instance wherein the tubular part of a larger diameter 75 consists of an elastic body, such as rubber and the like, the upper end of the lead guide pipe 57 being fitted more or less tightly into the lower half of the hole 64 of the said tubular part 75. FIG. 7 shows an instance wherein the tubular part of a larger diameter 61 is integrally formed at the upper end of the lead protective sleeve 57, a tube 63 being fitted inside thereof.

Further, the lead extruding device for mechanical pencils is realizable in several other constructions beside the embodiments described heretofore.

I claim:

1. In a mechanical type lead pencil embodying built-in resiliently biased, axially shiftable, digitally depressible chuck means for holding and selectively feeding filler lead through a central body passage, opening at least at one end thereof, and embodying filler lead reinforcing and protective sleeve means, the improvement comprising, in combination:

(a) a composite pencil body including an exterior, lower body portion with an internal axial passage having stepped shoulder stop means;

(b) said protective sleeve means comprising a rigid tubular sleeve coaxially aligned with said chuck and central body passage, being open at opposite lower and upper ends, and having a central lead passage of a size to closely slidably receive a filler lead there-through;

(c) said sleeve having axially fixed radially enlarged elastic clutch means of a size so as to slightly frictionally engage a filler lead received therein;

(d) said radially enlarged elastic clutch means having a portion extended radially in excess of the diameter of said sleeve and having a lower portion for engagement against a portion of said stepped shoulder stop means of paragraph (a);

(e) said sleeve and lower body portion relatively constructed and so disposed that said sleeve is slidable within and partially projects from said lower body portion, so that the sleeve normally retracts into said body responsive to a wearing away of said lead by engagement of the projecting part of said sleeve against a writing surface when in use; and

(f) said protective sleeve after a substantial retraction, is selectively restoreable to project a predetermined distance from said lower body portion by operative connection with and responsive to feeding of said lead responsive to said digital depression by and a release of said chuck means.

2. A pencil as defined in claim 1, wherein the elastic clutch means as per paragraph (d) further includes an upper portion of said tubular sleeve disposed for selective direct operative engagement by said chuck means.

3. A pencil as defined in claim 1 wherein the elastic clutch means is of open tubular form having its central opening substantially coaxially aligned with the lead passage of said sleeve and chuck means, and further includ-

ing an upper end beveled downwardly toward the central opening to facilitate the initial feed of a filler lead from said body and chuck central passage.

4. A pencil as defined in claim 2 wherein the elastic clutch means is of open tubular form having its central opening substantially coaxially aligned with the lead passage of said sleeve and chuck means, and further including an upper end beveled downwardly toward the central opening to facilitate the initial feed of a filler lead from said body and chuck central passage.

5. A pencil as defined in claim 2 wherein said stepped shoulder stop means of paragraph (a) include a first shoulder of relative small diameter constituting the stop for the enlarged elastic clutch means as per paragraph (d), and further including at least second shoulder stop means of greater diameter for ultimate direct engagement by a lower portion of said depressible chuck means to provide for a predetermined advancement of said lead and for a limited projection of said protective sleeve from said lower body portion.

6. A pencil as defined in claim 5, wherein said shoulder stop means further includes a third stepped shoulder stop means of progressively increased size beyond said first and second ones; said chuck means include resilient finger means at its lower end and an encircling, axially slidable collar with upper and lower ends and with internal finger-constricting means for cooperable engagement with cooperating means on said fingers to at times constrict them into lead-gripping engagement, said collar disposed within said body cavity and having limited axial movement with said chuck means when depressed and the lower end of said collar engaging said third shoulder stop means whereupon continuing limited movement of said chuck means frees said fingers prior to their stopping engagement against said second stop shoulder, thereby effecting a limited advancement of said lead and protective sleeve.

7. A pencil as defined in claim 2 wherein the elastic clutch means includes an elastic tubular portion having a lower radial surface, and rigidly attached on an upper end portion of said sleeve, and said sleeve including a rigid shell enclosing the radially outer periphery and lower radial surface of said elastic tubular portion.

8. A mechanical type lead pencil embodying built-in filler lead-feeding means and filler lead protective, reinforcing means, comprising in combination:

- (a) a composite pencil body including lower exterior body means having internal shoulder means and a hollow filler lead cavity extending through an axial central area of said body and terminating in at least one open end;
- (b) the built-in lead feeding means comprising axially elongated chuck means disposed within said central cavity, and having upper and lower ends, and a central filler lead passage in open communication with said cavity, said chuck means being alternately axially shiftable responsive to progressive depression and release by digital action of a user;
- (c) said chuck means including plural resilient finger means for gripping and for selectively feeding said filler lead through said filler passage and out said body open end and for gripping said lead to preclude retraction within said cavity responsive to exertion of writing pressure thereon;
- (d) the filler lead protective means including means for slidably mounting upon said filler lead and for limited reciprocable movement within and projecting partially from the open end of said lower body in a manner both freely independent of said lead-feeding chuck means and also responsive to selective operable engagement by the lower end of said lead-feeding chuck means;
- (e) said filler lead protective means constituted by:
  - (1) a tubular sleeve open at opposite ends, coaxial with said body cavity, and with and constituting

a continuation of said chuck lead passage, and closely slidably embracing and supporting a filler lead,

(2) said sleeve including at its upper end axially fixed elastic clutch means of a size to slightly frictionally engage said filler lead when slidably disposed within said sleeve; and

(3) said protective means and elastic clutch means having a peripheral portion extending radially in excess of the diameter of said protective sleeve for stopping engagement against said body shoulder means to limit the extent of sleeve projection from said body as per paragraph (d);

(f) said protective sleeve and body means being so relatively constructed and disposed that said sleeve is slidable within said lower body so that it normally retracts into said body responsive to wearing away of said lead during writing use by engagement of the sleeve end against the writing surface; and

(g) said protective sleeve, after substantial retraction, being selectively restoreable to a predetermined amount of projection from the lower body responsive to said digital actuated axial shifting of and engagement by said chuck means.

9. A mechanical lead pencil as defined in claim 8, wherein the elastic clutch means of paragraph (e) (3) is of open tubular form having its central opening coaxially aligned with the lead passage of said protective sleeve, and having the upper end beveled toward the central opening to facilitate initial feed of a filler lead from said body and chuck central cavity.

10. A mechanical lead pencil as defined in claim 8, biasing it an upward direction axially away from said lower body open end, said resilient fingers of said chuck means being of a character normally tending to spread radially away from the axial lead passage, and said chuck means includes an encircling, axially slidable collar with lower and upper ends and with internal constricting means for cooperable engagement with cooperating means on said fingers to at times constrict said fingers into a lead-gripping engagement, said collar being disposed within said central body cavity and having limited axial movement with said chuck means so as to progressively engage with second and third shoulder means other than but constituting part of said first-mentioned shoulder means of said lower body, responsive to the digital actuation of said chuck means, whereby the axial shifting downward movement effects a limited advancement or feeding of said filler lead prior to the lower end of said collar engaging said second shoulder means to release said fingers, and upon the reverse upward axial travel, the upper end of said collar engages said third shoulder means to simultaneously stop said chuck travel and to reapply the constricting gripping force of said chuck fingers to said filler lead.

11. In a mechanical type lead pencil embodying built-in lead-feeding means within a central body passage opening at least at the lower writing end of the pencil body, and embodying filler lead reinforcing-and-protective sleeve means, the improvement wherein:

- (a) said lead-feeding means comprises axially reciprocable, resiliently biased, digitally depressible-and-releaseable chuck means with a central lead passage for holding and selectively feeding filler lead through and out of said central lead and body passages;
- (b) said protective sleeve means comprising a rigid tubular sleeve slidably disposed in the open lower body end and coaxially aligned with said body and chuck central passage, and having a central lead passage of a size to closely slidably receive a filler lead therethrough;
- (c) said protective sleeve having elastic clutch means

at its upper end of a size internally to slightly frictionally engage a filler lead received therein;  
 (d) the filler lead protective means including means for slidably mounting upon said filler lead and for limited reciprocable movement within and projecting partially from the open end of said lower body in a manner both freely independent of said lead-feeding chuck means and also responsive to selective operable engagement by the lower end of said lead-feeding chuck means; and  
 (e) said sleeve and lower body portion relatively constructed and disposed so that said sleeve normally retracts into said body responsive to a wearing away of said lead by engagement of the projecting part of said sleeve against a writing surface, and after a substantial retraction said sleeve is selectively restorable to project a predetermined distance from said lower body portion by cooperatively engage-

able means on said sleeve, body and chuck means responsive to feeding of said lead responsive to said digital depression and release of said chuck means.

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15 LAWRENCE CHARLES, Primary Examiner

U.S. Cl. X.R.

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