

July 23, 1935.

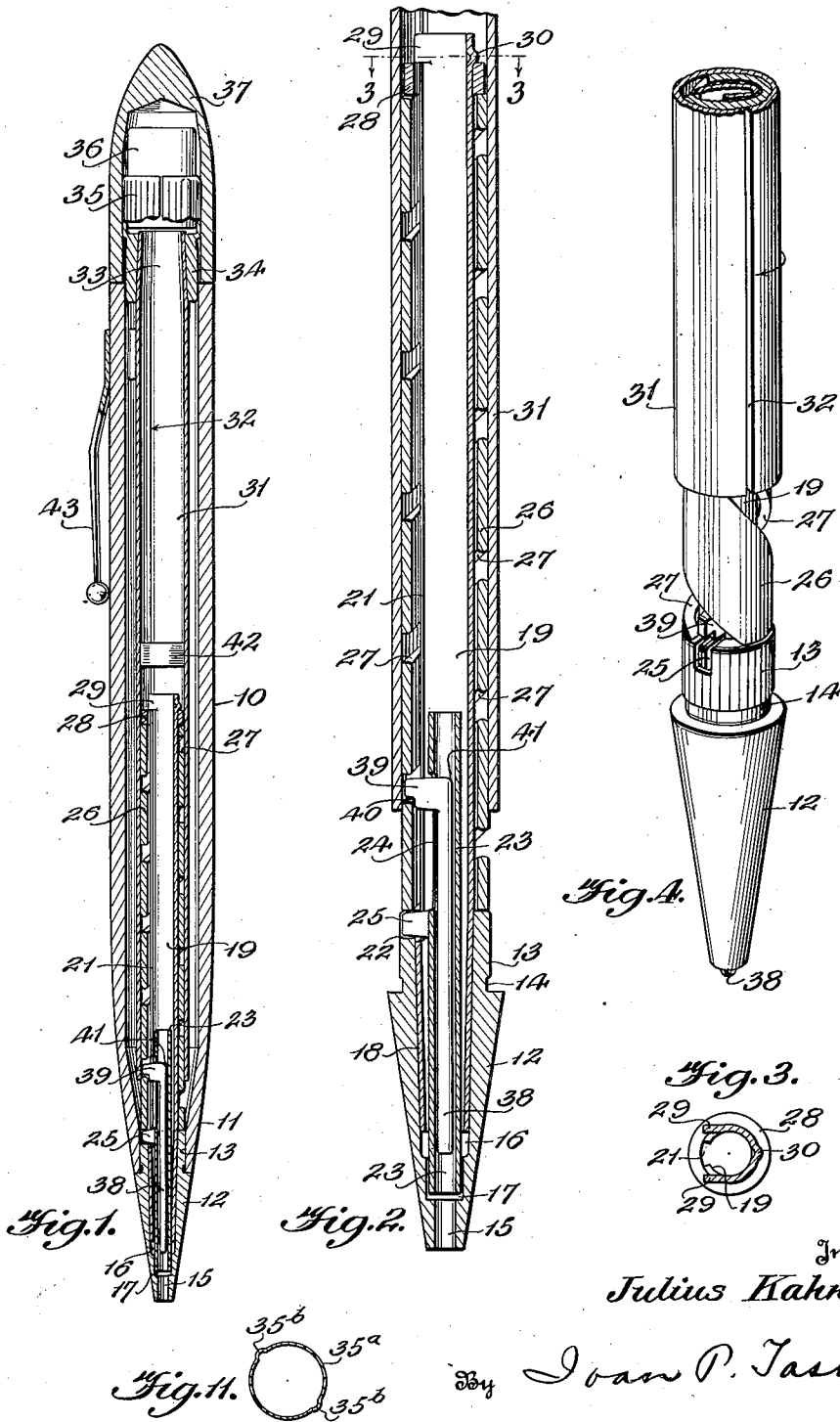
J. KAHN

2,009,182

MECHANICAL PENCIL

Filed Dec. 1, 1931

2 Sheets-Sheet 1



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MECHANICAL PENCIL

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2 Sheets-Sheet 2

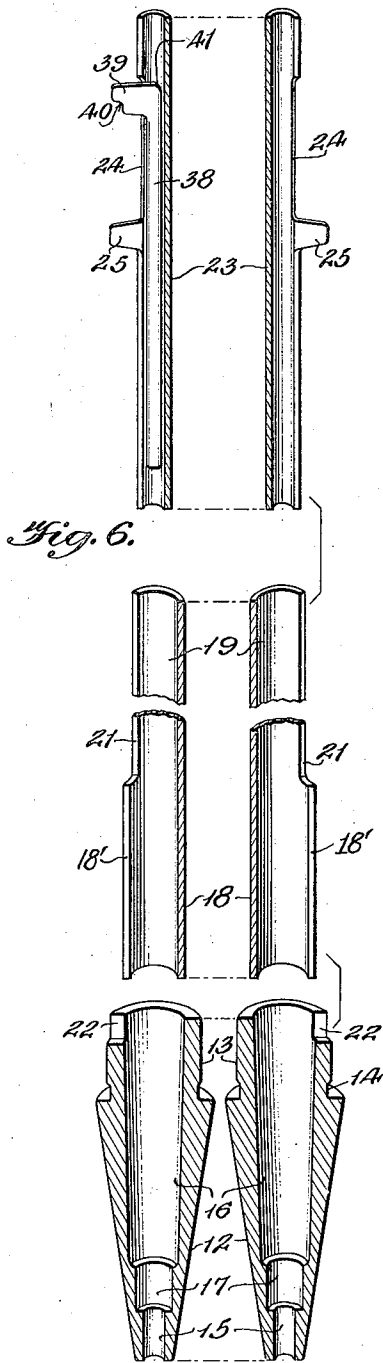


Fig. 7.

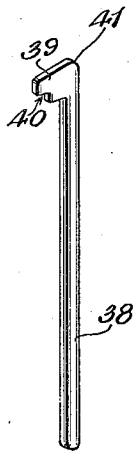


Fig. 8.

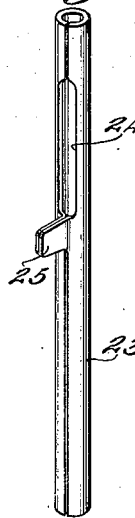


Fig. 9.

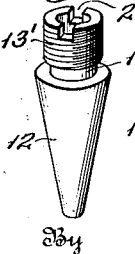
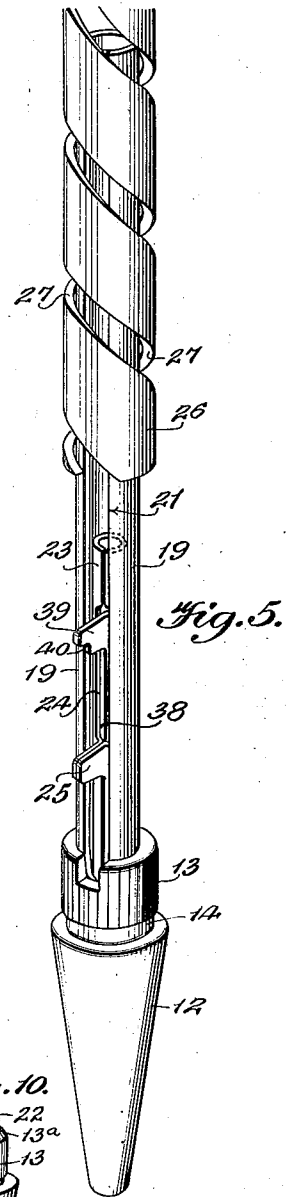
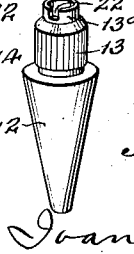


Fig. 10.



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# UNITED STATES PATENT OFFICE

2,009,182

## MECHANICAL PENCIL

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Application December 1, 1931, Serial No. 578,388

29 Claims. (Cl. 120—18)

This invention relates to mechanical pencils of the type wherein a moveable lead is employed, the lead being actuated by a spiral member for projection, retraction and expulsion.

In pencils of this character it has been common to secure certain of the parts together in assembled relation by screw threads or solder. Screw threads not only add to the expense of manufacture but are liable to unscrew and become loose. Also such screw threads, because of the small size of the parts, are of necessity very fine and are thus difficult to assemble, liable to be injured by crossing of the threads of two parts, and are liable to be stripped. Soldering is an expense and requires delicate manipulation.

It is one important object of the invention to eliminate connection of many parts by screwing or soldering, such parts usually connected in either of these manners being connected in the pencil as constructed in accordance with this invention by friction means of improved character.

In such pencils a lead expeller has been, in some instances, employed which has a lateral lug or projection engaging in the slot of a spirally slotted member. Such projections have hitherto been made of uniform width, the width being such as to work freely in the slot. Any small particles of lead broken off in the pencil are liable to get jammed in the movement at this point and put the lead expeller or ejector out of order. The pencil thus becomes difficult, if not impossible, to operate.

A second important object of the invention is to provide an improved lead expeller wherein the lug or projection is shouldered or stepped so that the shoulder works along the inner face of the spiral tube at the lower edge of the slot and thus keeps the lead ejector always in place and prevents jamming by broken leads.

It is desirable in such pencils to have the movement of the lead carrier positively checked while the ejector may continue to move.

A third important object of the invention is to provide an improved construction of the tip of such a pencil provided with a collar having a slot in its upper end arranged to register with the slot in the runner tube used herewith and which is carried by the tip and holds the lead carrier so that the lug of the lead carrier may pass into the slot or notch of the collar out of position to be affected by the spiral tube.

A fourth important object of the invention is to provide an improved form of lug for the lead carrier, the lug being tapered to fit the slit in

the spiral tube without unnecessary play in the action of the pencil.

With the above and other objects in view, as will be presently understood, the invention consists in general of certain novel details of construction and combinations of parts hereinafter fully described, illustrated in the accompanying drawings and specifically claimed.

In the accompanying drawings like characters of reference indicate like parts in the several views and:

Figure 1 is a vertical sectional view through the pencil showing the parts in lead receiving position;

Figure 2 is an enlarged vertical section through the operating mechanism;

Figure 3 is a section taken on the line 3—3 of Figure 2, showing the manner of locking the complete mechanism in assembled relation;

Figure 4 is a perspective view showing the lead ejector in ejecting position and the spiral locked thereby;

Figure 5 is a partly assembled perspective view showing the lead carrier and ejector in operating position and the spiral in raised position;

Figure 6 is a vertical sectional split view in perspective of the tip guide and lead carrier in dissociated arrangement;

Figure 7 is a perspective view of the lead ejector; and

Figure 8 is a perspective view of the lead carrier;

Figure 9 is a perspective view of a modified form of the tip used herewith;

Figure 10 is a perspective view of a further modified form of tip used herewith; and

Figure 11 is a view showing a modified form of eraser holder.

In the embodiment of the invention here disclosed there is provided a barrel having a cylindrical upper portion 10 and a frusto-conical lower portion 11. A tip having a frusto-conical body 12 forms, when assembled, a continuation of the portion 11 of the barrel. At the upper end of this body there is provided a cylindrical collar 13 having a neck 14, the exterior of the collar being circumferentially corrugated, as shown in Figure 5. This tip has an axial passage there-through. The lower end 15 of this passage is cylindrical and of just such a diameter as to snugly receive the lead to be used. The upper end 16 of this passage is considerably larger than the part 15 and is slightly tapered from one end to the other, the larger end being at the top. Between these parts 15 and 16 is an intermediate

portion 17 of cylindrical form, being of slightly greater diameter than the part 15 and smaller than the portion 16. The tapered lower end 18 of a runner tube having a cylindrical upper portion 19 is provided with a longitudinal slot 21. The lower end 18 of the runner tube is provided with a longitudinally extending slit 18' so that the lower portion, when assembled in the tapered bore 16, of the tip, becomes taperingly fitted therein. The taper of the portion makes a tight frictional engagement with the tip and the corrugated collar 13 similarly makes a tight frictional engagement with the barrel part 11. The collar 13 is furthermore provided with a slot or notch 22 registering with the slot 21.

While a tip provided with a collar 13 or 13', as shown in Figures 4, 5 and 9, is fairly satisfactory, it has been found that sometimes when the tip is pushed into the celluloid barrel, celluloid particles disengaged from the barrel fall into the notch 22, thereby preventing the lug 25 from working properly. In order to prevent this from happening, the tip may be made, as shown in Fig. 10, and the collar 13 is provided with a reduced neck 13<sup>a</sup>, which carries a slot or notch 22. This prevents the inside of the celluloid barrel from contacting with the edges of the slot 22. In the form of the tip shown in Figure 9, the same modification may be introduced.

A lead carrier tube 23 having a longitudinal slot 24 near its upper end fits slidably in the runner tube and is provided with a laterally extending lug or projection 25. This lug is taperingly reduced in height towards its outer or free end, as shown best in Figure 2. This lug projects through the slot 24 and, in its lowest position, seats in the notch 22. A spiral tube or operating tube 26 having a spiral slot 27 therein, extending from one end to the other, is revolvably mounted in the barrel around the runner tube part 19. The lug 25 is very thin so that the slot 24 may be made narrower than the lead used and thereby broken pieces of lead are prevented from falling out of the tube 16 and jamming in the spiral slot 27. The lower end of this tube 26 rests on the top of the collar 13 and on the upper end is a ring or washer 28 which is held in position by wings 29 and a lug 30 formed on the upper end of the runner tube. The spiral tube is thus held securely to the runner tube without the employment of screw fittings or solder.

On this spiral tube is fitted a drive tube 31 provided with a longitudinal slot 32 extending from end to end thereof. Before assembly the internal diameter of this tube is slightly smaller than the external diameter of the spiral tube but, the tube 31 being of resilient metal, can expand as it is placed on the spiral tube and will thus frictionally grip the spiral tube so that rotation of the drive tube drives the spiral tube. The upper end of the tube 31 is tapered as at 33 and fits in a tapered opening in the cylindrical body 34 of an eraser holder having a split and corrugated spring collar 35 wherein is removably fitted an eraser 36. A cap 37 normally covers the eraser and collar and frictionally fits the drive tube to rotate the latter.

In the tube 23 is fitted a rod or pin 38 forming the body of the lead ejector used herewith and a lug 39 projects laterally from the ejector adjacent its upper end 41. This lug projects through the slots 24 and 21 and has its outer end notched as at 40 so that its end may ride in the slot 27 while the shoulder formed by the notch 40 engages against the inner surface of the tube 26 just be-

low the slot 27. The upper and lower edges of the lug and its projecting end above the notch converge taperingly outward from the rod. By reason of this construction the spaces between said edges and the upper lower edges of the spiral slot in the actuating tube are wider at the outer side of the actuating tube than at the inner side of said tube. In the use of such pencils a certain amount of dust scrapes off the lead. The tapering edges allow any dust which may collect on the top edge of the lug and the lower edge of the slot to pass freely outward of the tube and tend to prevent its passing into the tube with consequent interference with the operation of the parts.

In the drive tube 31 is frictionally fitted a diaphragm 42 and a clip 43 may be provided in the usual manner.

In the form of tip shown in Figure 9 the collar 13' is screw threaded exteriorly but is otherwise constructed like the tip shown in Figure 2, except the slot 22 extends diametrically across the upper portion of the collar 13'.

In using the device the cap is turned clockwise to propel the lead outwardly and anticlockwise to retract the lead. To load the pencil the parts are brought to fully protracted position and then the cap rotated in anti-clockwise direction to a slight extent so as to retract the ejector. The parts will then be in the position shown in Figure 2. A lead is then pushed through the opening 15 into the lower end of the lead carrier 23 where it is frictionally held. The anticlockwise movement is then continued. As this is done the lug 39 engages the upper end of the slot 24 and the lug 25 is raised out of the notch 22 to be engaged in the slot 27. The lugs 25 and 39 will now move up in unison until the lead has been sufficiently retracted. As the lead wears down the cap is twisted in a clockwise direction to project lead for use. When the lead has been used as far as possible the parts will again be in the position shown in Figure 2. The further clockwise movement of the cap will result in the lug 39 being carried down and the ejector will operate to push the remainder of the lead out of the tip.

It will also be noted that if the cap be tight on the eraser holder and the movement be turned to extreme up or down positions, further efforts to turn the cap will not injure the movement because the driver tube will slip on the spirally grooved tube or the eraser holder will slip on the driver tube.

In the form shown in Figure 11, the eraser holder has a collar 35<sup>a</sup> which is not split, but is provided with longitudinal ribs 35<sup>b</sup> which are engaged by the cap.

It is to be noted that in accordance with the present invention, soldering of the lower end of the runner tube to the interior of the pencil tip is eliminated, and this is accomplished by providing a tip member with a passageway slightly tapered from one end to a point adjacent the other, and wedging in said tip the lower end of the runner tube, the latter being provided with a slit. The lower end of the runner tube is taperedly fitted in the tapered passageway. The tip member preferably has a heavy wall throughout its extent and the runner tube is preferably of uniform thickness and its lower end is held wholly within the tip. The above provides means for retaining the runner tube in immovable connection with the tip.

There has thus been provided a simple and

efficient device of the kind described and for the purpose specified.

It is obvious that changes may be made in the form and construction of the invention without departing from the principles involved. It is not therefore desired to confine the invention to the exact form herein shown and described but it is desired to include all forms which properly come within the scope claimed.

10 What is claimed is:

1. In a mechanical pencil, a barrel, a tip adapted to form an extension on the barrel, said tip having a passageway slightly tapered from one end to a point adjacent the other, a collar on said tip frictionally engaged in the lower end of the barrel, and a runner tube having its lower end taperingly fitted in said tip to be immovable relative thereto.

2. In a mechanical pencil, a barrel, a tip adapted to form an extension on the barrel, a collar associated with said tip frictionally engaged in the lower end of the barrel, a runner tube having its lower end frictionally fitted in said tip to be immovable relative thereto, a spirally slotted actuating tube surrounding the runner tube and revolvable thereon, a driver tube having its lower part frictionally fitted on the actuating tube and normally operatively immovable relative thereto, and a head frictionally fitted on the upper end of the driver tube normally operatively immovable relative thereto and projecting above the upper end of the barrel.

3. In a mechanical pencil, a barrel, a tip adapted to form an extension on the barrel, a collar associated with said tip frictionally engaged in the lower end of the barrel, a runner tube having its lower end frictionally fitted in said tip to be immovable relative thereto, a spirally slotted actuating tube surrounding the runner tube and revolvable thereon, a driver tube having its lower part frictionally fitted on the actuating tube and normally operatively immovable relative thereto, a head frictionally fitted on the upper end of the driver tube normally operatively immovable relative thereto and projecting above the upper end of the barrel, and a cap frictionally fitted on the head to effect rotation thereof and forming a continuation of the barrel.

4. In a mechanical pencil, a barrel, a tip adapted to form a continuation of the barrel, a collar associated with the upper end of the tip and fitted in the lower end of the barrel, a runner tube having its lower end fitted in the tip and having a longitudinal slot therein, said collar having a notch in its upper edge registering with the slot, a spirally slotted actuating tube surrounding the runner tube and resting on the upper face of the collar, and a lead carrier tube within the runner tube and having a laterally projecting lug extending through the slot of the runner tube and adapted selectively to engage in the spiral slot and to rest in the notch whereby the actuating tube may revolve with respect to the carrier tube and the latter be held stationary by the engagement of the lug in said notch.

5. In a mechanical pencil, a barrel, a tip adapted to form a continuation of the barrel, a collar associated with the upper end of the tip and fitted in the lower end of the barrel, a runner tube having its lower end fitted in the tip and having a longitudinal slot therein, said collar having a notch in its upper edge registering with the slot, a spirally slotted actuating tube surrounding the runner tube and resting on the upper face of the collar, a lead carrier tube within the runner tube and having a laterally projecting lug extending through the slot of the runner tube and adapted selectively to engage in the spiral slot and to rest in the notch

and having a laterally projecting lug extending through the slot of the runner tube and adapted selectively to engage in the spiral slot and to rest in the notch whereby the actuating tube may revolve with respect to the carrier tube and the latter be held stationary by the engagement of the lug in said notch, said carrier tube having a slot in its upper portion, a lead ejector pin in said carrier tube and movable longitudinally thereof, and a lug on said pin projecting through the slots in the carrier and runner tubes and engaging in the spiral slot of the actuating tube.

6. In a mechanical pencil, a barrel, a tip adapted to form a continuation of the barrel, a collar associated with the upper end of the tip and fitted in the lower end of the barrel, a runner tube having its lower end fitted in the tip and having a longitudinal slot therein, said collar having a notch in its upper edge registering with the slot, a spirally slotted actuating tube surrounding the runner tube and resting on the upper face of the collar, and a lead carrier tube within the runner tube and having a laterally projecting lug extending through the slot of the runner tube and adapted selectively to engage in the spiral slot and to rest in the notch whereby the actuating tube may revolve with respect to the carrier tube and the latter be held stationary by the engagement of the lug in said notch, said carrier tube having a slot in its upper portion, a lead ejector pin in said carrier tube and movable longitudinally thereof, and a lug on said pin projecting through the slots in the carrier and runner tubes and engaging in the spiral slot of the actuating tube, the lug on said pin having a notch in its lower outer corner to provide a shoulder engaging the inner surface of the actuating tube at the lower edge of its slot.

7. In a mechanical pencil, a barrel, a tip adapted to form a continuation of the barrel, a collar associated with the upper end of the tip and fitted in the lower end of the barrel, a runner tube having its lower end fitted in the tip and having a longitudinal slot therein, said collar having a reduced neck provided with a notch in its upper edge registering with the slot, a spirally slotted actuating tube surrounding the runner tube and resting on the upper face of the collar, a lead carrier tube within the runner tube and having a laterally projecting lug extending through the slot of the runner tube and adapted selectively to engage in the spiral slot and to rest in the notch whereby the actuating tube may revolve with respect to the carrier tube and the latter be held stationary by the engagement of the lug in said notch, said carrier tube having a slot in its upper portion, a lead ejector pin in said carrier tube and movable longitudinally thereof, and a lug on said pin projecting through the slots in the carrier and runner tubes and engaging in the spiral slot of the actuating tube.

8. In a mechanical pencil, a barrel, a tip adapted to form a continuation of the barrel, a collar associated with the upper end of the tip and fitted in the lower end of the barrel, a runner tube having its lower end fitted in the tip and having a longitudinal slot therein, said collar having a reduced neck provided with a notch in its upper edge registering with the slot, a spirally slotted actuating tube surrounding the runner tube and resting on the upper face of the collar, a lead carrier tube within the runner tube and having a laterally projecting lug extending through the slot of the runner tube and adapted selectively to engage in the spiral slot and to rest in the notch

whereby the actuating tube may revolve with respect to the carrier tube and the latter be held stationary by the engagement of the lug in said portion, a lead ejector pin in said carrier tube and movable longitudinally thereof, and a lug on said pin projecting through the slots in the carrier and runner tubes and engaging in the spiral slot of the actuating tube, the lug on said pin having a notch in its lower outer corner to provide a shoulder engaging the inner surface of the actuating tube at the lower edge of its slot.

9. In a mechanical pencil, a barrel, a tip adapted to form a continuation of the barrel, a collar associated with the upper end of the tip and fixedly fitted in the lower end of the barrel, a runner tube having its lower end fitted in the tip and having a longitudinal slot therein, said collar having a notch in its upper edge registering with the slot, a spirally slotted actuating tube surrounding the runner tube and resting on the upper face of the collar, a lead carrier tube within the runner tube and having a laterally projecting lug extending through the slot of the runner tube and adapted selectively to engage in the spiral slot and to rest in the notch whereby the actuating tube may revolve with respect to the carrier tube and the latter be held stationary by the engagement of the lug in said notch, said carrier tube having a slot in its upper portion, a lead ejector pin in said carrier tube and movable longitudinally thereof, and a lug on said pin projecting through the slots in the carrier and runner tubes and having a reduced outer end engaging in the spiral slot of the actuating tube, the upper and lower edges of the said reduced end converging from their respective parts outwardly to the end in the spiral groove.

10. A lead ejecting rod for use in mechanical pencils having a radial operating lug provided with a notch at one corner of its outer end to form a reduced end adapted to fit the slot of an actuating tube and a shoulder to bear against the inner face of such an actuating tube to hold the lug and rod against radial outward movement the top and bottom faces of the lug and its reduced end tapering toward each other outwardly from the body of the rod.

11. In a mechanical pencil, a revoluble and spirally slotted actuating tube, and a lead ejecting rod having a laterally projecting lug at its upper end provided with a notch in its lower corner to form a reduced end on said lug, said reduced end engaging in the slot of the actuating tube and having its upper and lower edges converging outwardly.

12. In a mechanical pencil, a barrel, a tip adapted to form an extension on the barrel, said tip having a passageway slightly tapered from one end to a point adjacent the other, a collar adjacent said tip fixedly engaged in the lower end of the barrel, a runner tube having its lower end taperingly fitted in said tip to be immovable relative thereto, a spirally slotted actuating tube surrounding the runner tube and revoluble thereon, a driver tube having its lower part fixedly fitted on the actuating tube and normally operatively immovable relative thereto, and a head fixedly fitted on the upper end of the driver tube normally operatively immovable relative thereto and projecting above the upper end of the barrel.

13. In a mechanical pencil, a barrel, a tip adapted to form an extension on the barrel, said tip having a passageway slightly tapered from one

end to a point adjacent the other, a collar adjacent said tip fixedly engaged in the lower end of the barrel, a runner tube having its lower end taperingly fitted in said tip to be immovable relative thereto, a spirally slotted actuating tube surrounding the runner tube and revoluble thereon, a driver tube having its lower part fixedly fitted on the actuating tube and normally operatively immovable relative thereto, a head fixedly fitted on the upper end of the driver tube normally operatively immovable relative thereto and projecting above the upper end of the barrel, and a cap fitted on the head to effect rotation thereof and forming a continuation of the barrel.

14. In a mechanical pencil, a barrel, a tip adapted to form an extension on the barrel, said tip having a passageway slightly tapered from one end to a point adjacent the other, a collar adjacent said tip fixedly engaged in the lower end of the barrel, a runner tube having its lower end taperingly fitted in said tip to be immovable relative thereto, a spirally slotted actuating tube surrounding the runner tube and revoluble thereon, a driver tube having its lower part frictionally fitted on the actuating tube and normally operatively immovable relative thereto, and means in operative connection with the driver tube to effect rotation thereof, said means being normally operatively immovable relative to the driver tube.

15. In a mechanical pencil, a barrel, a tip adapted to form an extension on the barrel, said tip having a passageway slightly tapered from one end to a point adjacent the other, a collar adjacent said tip fixedly engaged in the lower end of the barrel, a runner tube having its lower end taperingly fitted in said tip to be immovable relative thereto, a spirally slotted actuating tube surrounding the runner tube and revoluble thereon, a driver tube having its lower part frictionally fitted on the actuating tube and normally operatively immovable relative thereto, a head fitted to the upper end of the driver tube normally operatively immovable relative thereto, and a cap fitted on the head to effect rotation thereof and form a continuation of the barrel.

16. In a mechanical pencil, a barrel, a tip adapted to form an extension on the barrel, said tip having a passageway slightly tapered from one end to a point adjacent to the other, a collar associated with the tip and engaged in the barrel to connect the tip and barrel, a runner tube having its lower end taperingly fitted in said tip to be immovable relative thereto, a spirally slotted actuating tube surrounding the runner tube and revoluble thereon, and means to rotate said actuating tube.

17. In a mechanical pencil, a barrel, a tip adapted to form an extension on said barrel, said tip having a passageway slightly tapered from its top portion downwardly to a point adjacent the bottom portion, a collar associated with the tip and engaged in the barrel to connect the tip and barrel, a runner tube having a lower end provided with a slit and taperingly fitted in said tip to be immovable relative thereto, a spirally slotted actuating tube surrounding the runner tube and revoluble thereon, and means to rotate said actuating tube.

18. In a mechanical pencil, a barrel, a tip adapted to form an extension on the barrel, said tip having a passageway tapered from one end to a point adjacent to the other, a collar associated with the tip and fixedly engaged in the barrel to connect the tip and barrel, a runner tube having a lower end provided with a slit and taperingly

fitted in said tip to be immovable relative thereto, a spirally slotted actuating tube surrounding the runner tube and revoluble thereon, a driver tube having its lower part frictionally fitted on the actuating tube and normally operatively immovable relative thereto, and means in operative connection with the driver tube to effect rotation thereof, said means being normally operatively immovable relative to the driver tube.

19. In a mechanical pencil, a barrel, a tip adapted to form an extension on the barrel, said tip having a passageway tapered from one end to a point adjacent to the other, a collar associated with the tip and fixedly engaged in the barrel to connect the tip and barrel, a runner tube having its lower end taperingly fitted in said tip to be immovable relative thereto, a spirally slotted actuating tube surrounding the runner tube and revoluble thereon, a driver tube frictionally fitted on the actuating tube, a head fitted to the upper end of the driver tube normally operatively immovable relative thereto, and a cap fitted on the head to effect rotation thereof and form a continuation of the barrel.

20. In a mechanical pencil, a barrel, a tip adapted to form an extension on the barrel, said tip having a passageway slightly tapered from one end to a point adjacent to the other, a collar associated with the tip and engaged with the barrel to connect the tip and barrel, a runner tube provided with a longitudinal slot therein and having a tapered lower end provided with a slit and taperingly fitted in said tip, said collar having a notch in its upper edge registering with the slot, a spirally slotted actuating tube surrounding the runner tube and resting on the upper face of the collar, and a lead carrier tube within the runner tube and having a laterally projecting lug extending through the slot of the runner tube and adapted selectively to engage in the spiral slot and to rest in the notch whereby the actuating tube may revolve with respect to the carrier tube and the latter be held stationary by engagement of the lug in said notch.

21. In a mechanical pencil, a barrel, a tip adapted to form an extension on the barrel, said tip having a passageway slightly tapered from one end to a point adjacent to the other, a collar associated with said tip and engaged in the barrel to connect the tip and barrel, and a runner tube having a lower end provided with a slit and taperingly fitted in said tip to be immovable relative thereto.

22. In a mechanical pencil, a barrel, a tip having a passageway slightly tapered from one end to a point adjacent to the other, and a runner tube having its lower end tapered and frictionally fitted in the tapering passageway of said tip.

23. A lead ejecting rod for use in mechanical pencils having a radial operating lug provided with a notch at its lower outer corner to form a reduced end adapted to fit the slot of an actuating

tube and a shoulder to bear against the inner face of such an actuating tube to hold the lug and rod against radial outward movement.

24. In a mechanical pencil, a barrel, a tip having a passageway slightly tapered from one end to a point adjacent the other, a longitudinally slotted runner tube having its lower end provided with a slit and wedged in said tip, the wedging of the tube in the tip retaining the tube in immovable connection with the tip.

25. In a mechanical pencil, a barrel, a tip having a passageway slightly tapered from one end to a point adjacent the other, said tip having a heavy solid wall throughout its extent and a longitudinally slotted runner tube having its lower end provided with a slit and wedged in said tip, the wedging of the tube in the heavy walled tip retaining the tube in immovable connection with the tip.

26. In a mechanical pencil, a barrel, a tip having a passageway slightly tapered from one end to a point adjacent the other, said tip having a heavy solid wall throughout its extent and a longitudinally slotted runner tube having its lower end provided with a slit and wedged in said tip, the wedging of the tube in the heavy walled tip retaining the tube in immovable connection with the tip, the lower end of said runner tube being held wholly within said tip.

27. In a mechanical pencil, a barrel, a tip having a passageway slightly tapered from one end to a point adjacent the other, said tip having a heavy solid wall throughout its extent and a longitudinally slotted runner tube having its lower end provided with a slit and wedged in said tip, said tube having its wall of uniform thickness, the wedging of the tube in the heavy walled tip retaining the tube in immovable connection with the tip, the lower end of said runner tube being held wholly within said tip.

28. In a mechanical pencil, a barrel, a tip having a passageway slightly tapered from one end to a point adjacent the other, said tip having a solid wall throughout its extent and a longitudinally slotted runner tube having its lower end taperingly fitted and wedged in said tip, the tapering and wedging of the tube in the heavy walled tip retaining the tube in immovable connection with the tip.

29. In a mechanical pencil, a barrel, a tip having a passageway slightly tapered from one end to a point adjacent the other, said tip having a solid wall throughout its extent and a longitudinally slotted runner tube having its lower end taperingly fitted and wedged in said tip, the tapering and wedging of the tube in the heavy walled tip retaining the tube in immovable connection with the tip, the lower end of said runner tube being held wholly within said tip.

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