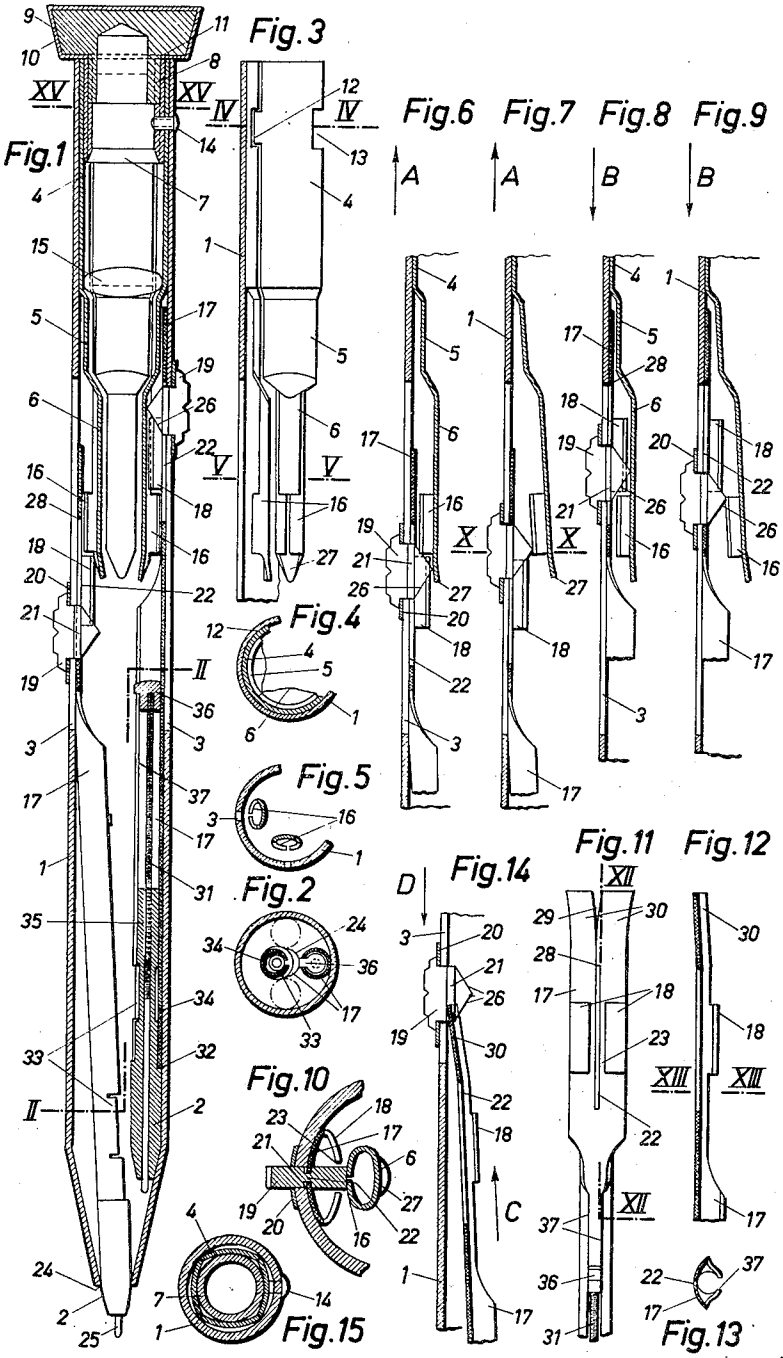
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PLURAL PENCIL WITH SLIDABLE LEAD CARRIERS

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PLURAL PENCIL WITH SLIDABLE LEAD CARRIERS

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This invention relates to a pencil in which a plurality of lead-carriers are selectively transferred by slide-members, moving in slots of the casing, from their position of rest to their position of use and vice versa, and then secured in their respective position by novel and reliable locking means.

In known constructions of this kind these locking means consist of widened portions in the slots of the casing in which the slide-members are moving. As, however, all of these widened slot-portions are arranged around the casing at the same level, it is obvious, that the wall of the latter is considerably weakened by them.

Another disadvantage of this old way of locking the lead-carriers in position are the sharp edges of the aforesaid widened slot-portions, which naturally easily wear out and in their worn-out condition no longer constitute reliable means for locking the lead-carriers in their final positions of work and of rest.

The object of the present invention is to overcome these disadvantages and to provide a pencil of this type which combines the features of simplicity of operation and reliability of use.

According to the invention this is accomplished in an efficient and satisfactory manner by arrangng the locking means within the casing in such a way that simple longitudinal shifting of the slide-members in the direction in which the appertaining lead-carriers are to be moved will lock the lead-carriers in the intended position of work or of rest, whereby, during the first stage of the shifting movement, the locking means are displaced by the slide-members from the locking position previously held by them.

Additional features and advantages of the invention may be understood from the following detailed description taken in connection with the accompanying drawings, forming a part of the specification, and in which similar reference numerals indicate like parts in the different figures. However, it is to be understood that the invention is not confined to any strict conformity with the drawings, but may be changed or modified, so long as such changes or modifications mark no material departure from the salient features of the invention as expressed in the appending claims.

In the drawings:

Fig. 1 is a longitudinal sectional view of the pencil.

Fig. 2 is a sectional view on line II—II of Fig. 1.

Fig. 3 is a detail in side and front elevation of the spring-supported locking member,

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Figs. 4 and 5 are sectional views on lines IV—IV and V—V of Fig. 3.

Figs. 6 to 9 are longitudinal sectional views of the forward end of the spring-supported locking member and of the rear end of the lead-carrying member and its associated slide-head.

Fig. 10 is a sectional view on line X—X of Fig. 7.

Fig. 11 is a fragmentary view of the rear end of the lead-carrying member.

Figs. 12 and 13 are sectional views on line XIII—XIII of Fig. 11 and on line XIII—XIII of Fig. 12.

Fig. 14 is a longitudinal sectional view, showing how during the assembling action the slide-head is pushed from the outside through the guide-slot of the casing into the slit in the rear portion of the lead-carrying member.

Fig. 15 is a sectional view on line XV—XV of Fig. 1.

Referring now to the drawings in detail, the casing 1 is provided with the guide-slots 3, which are of uniform width throughout their entire length. Arranged in the interior of the casing 1, in front of each of said guide-slots 3, is a spring-arm consisting of the three step-like portions 4, 5 and 6. Said spring-arm is secured in position by having its end-portion 4 clamped between an annular sleeve 7 and the rear end of the casing 1. Sleeve 7 is provided with a threaded opening in which engages the nipple 8 of a closure member or cover 9 of a storing magazine for spare leads.

The head portions of the cover 9 is of such formation that it may be coated with a shell 10 of precious metal or the like without requiring any soldering work. In order to fasten the shell 10 on the head portion it is merely slipped onto it and then folded around the edges 11.

In order to facilitate the proper arrangement of the spring-arms 4, 5, 6 within the casing 1 and to secure them in correct positions, with respect to each other, each of the spring portions 4 is provided with a lateral projection 12 adapted for engagement in a recess 13, of corresponding size and formation, of the adjacent spring portion 4. In addition to this the invention provides a screw 14, by means of which sleeve 7 and the springs 4, 5, 6 are releasably held in fixed relation with respect to each other and against axial displacement within the casing.

Regarding the clamping of the spring portions 4 between sleeve 7 and the rear end of the casing 1, it may further be mentioned, that the inner diameter of the casing, as supplied by the factories, is not always exactly alike. In order

to insure, notwithstanding this fact, a frictional and resilient fit of the spring portions 4 between the sleeve and the casing, the portions 4 are so designed that their radius of curvature slightly exceeds in length that of sleeve 7 on the outside and that of the casing on the inside (see Fig. 15).

The spring portions 4 simultaneously serve to form between each other the storing magazine for spare leads, whose bottom preferably consists of rubber or the like elastically fitted in its position as at 15.

The forward ends, i. e. the portions 6 of the spring arms, are curved in a direction opposite to that of the portions 4 and 5 (see Fig. 4). The spring portions 6 are further provided with the locking member 16, bent from two lateral sheet-metal flaps of the portions 6 (see Figs. 5 and 10). In their position of rest the locking members 16 project into the shifting path of the stop members 18 of the lead-carrying members 17. The forward portion of these lead-carrying members has been shaped to form a three-quarter-tube, while the rear portion is of shovel-like conformation and provided, similarly to the spring-portions 6, with two lateral sheet-metal flaps appropriately curved toward each other to form the stop-members 18 (see Figs. 10 and 11). Fastened to the forward portion of the lead-carrying-member 17 is the lead-carrier 2. When the lead-carrier 2 has been projected into working position, the appertaining stop-member 18 abuts the forward edge of the locking member 16. But when the lead-carrier is being retracted its stop-member 18 moves into its position of rest behind the locking member 16 (see Fig. 1). Owing to this arrangement the lead-carrier is reliably secured against unintended displacement in either of the aforementioned positions.

In their forward and backward movement within the casing 1 the lead-carrying-members 17 are guided exclusively by the guide-slots 3 and the slide-heads 19 adapted for sliding movement in said slots. In order to prevent heads 19 from dropping into the slots, small washers 20 have been interposed between the outwardly projecting portions of the heads and the outer surface of the casing 1. The heads 19 have further been equipped with lateral grooves 21, by means of which they engage in longitudinal slots 22 provided in the rear ends of the lead-carrying-members 17 and are thus prevented by the edges of said slots from dropping out of the casing (see Fig. 10). In the longitudinal slots 22 the slide-heads 19 can be pushed forward and backward, whereby they pass through a gap 23 formed in the stop-members 18 by the sheet-metal flaps, which for that purpose have been bent in such a way that the gap 23 is formed between them, i. e. between their inwardly directed edges (see Figs. 10 and 11). Fig. 1 of the drawings shows the lead-carrying member 17 on the left in its position of work, with the slide-head 19 at the foremost end of the longitudinal slot 22, while the lead-carrying member on the right is in its position of rest, with the slide-head 19 at the rearmost end of the slot 22. However, it will be noticed that, with regard to the slot 3, the slide-head 19 on the left and its appertaining lead-carrying member 17 have not yet reached their foremost position. If the slide-head 19 is pushed to the foremost end of slot 3, the lead-carrying member 17 is thereby projected in such a way that the lead-carrier 2 protrudes from the opening 24 of the casing 1 to such an extent that it can be grasped by the fingers and turned for the purpose of removing therefrom the worn-down lead 25. If the pencil is used for writing, with the slide-head 19 at the foremost end of slot 3, the lead-carrying member 17 will automatically slip backward into the position illustrated on the left of Fig. 1, in which the stop-member 18 abuts the locking-member 16 and in which the lead-carrier 2 is in its proper position of work.

The invention resides in the provision of the spring-arms 4, 5, 6 and the locking-members 16 carried by said spring-arms, and in the way in which the locking-members 16 are moved out of their locking position before or behind the stop-members 18 through mere longitudinal shifting of the slide-heads 19 in the same direction in which the lead-carriers 2 have to be moved into or out of working position. This automatic removal of the locking members 16 out of their locking position is accomplished by two inclined edges at the underside of the slide-heads 19 at the first stage of every longitudinal shifting movement, during which the slide-heads 19 do not only slide in the guide-slots 3 of the casing 1, but also in the longitudinal slots 22 of the lead-carrying members 17, and simultaneously pass through the gap 23 in the stop-member 18 (see Figs. 10 and 11). Each of the slide-heads 19 is provided with an inclined front edge and an inclined rear edge. When the slide-head 19 on the left of Fig. 1 is pushed backward, in order to retract the associated lead-carrier 2 from its position of work, head 19 will first slip through gap 23 and move into the position illustrated in Fig. 6 without pulling the appertaining lead-carrying member 17 along with it, because the backward movement of the member 17 is still blocked by the locking-member 16 bearing with its forward end against the rear end of the stop-member 18. It will be noticed that, with head 19 in the aforesaid position, the pointed end of head 19, formed by the two inclined edges 26, has already been caught up in the groove of the curved end of the spring portion 6, which, to facilitate its cooperative engagement with the pointed end of head 19, terminates in a slightly inwardly bent spoon-shaped tip 27 (see Figs. 3 and 10). When the backward movement of head 19 continues, the inclined rear edge of head 19 slips gradually behind the front edge of the locking member 16, displacing the latter and the spring-arm on which it is mounted from its position of rest (see Fig. 6) and forcing it into the position illustrated in Fig. 7. In this position head 19 has reached the rear end of the slot 22 of the lead-carrying member 17 and now carries the member 17 and its stop-member 18 along with it, whereby the backward movement of the stop-member 18 is no longer blocked by the locking member 16. That is how the stop-member 18 is in its entirety shifted behind the locking-member 16, whereupon the locking member 16 returns to its former position, due to the action of its spring, and thus locks the lead-carrying member 17 in its position of rest. Head 19 is now in its rearmost position in which it abuts the rear end of its guide slot 3. This is the position illustrated on the right side of Fig. 1. When the operation is reversed in order to project the lead-carrier 2 on the right side of Fig. 1 into its position of work, head 19 will first slip into gap 23 of the stop member 18 until the position of Fig. 8 has been reached, while its associated lead-carrying member 17 still remains in its position of rest, due to the fact that the forward movement of its stop-member 18 is still blocked by the locking-

member 16. When the forward movement of head 19 continues, the inclined front edge 26 of head 19 will bear against the rear edge of the locking member 16 and force it out of its locking position (Fig. 8) into its displaced position of Fig. 9. After head 19 has thus reached the front edge of slot 22, it will now pull the lead-carrying member 17 and its appertaining stop-member 18 along, whose forward movement is no longer blocked, owing to the displacement of the locking member 16. Thus the stop-member 18 is completely transferred from its position behind the locking member 16 to its position before the latter, whereupon the locking-member 16 is urged back by its spring-arm into locking position, in which it supports the lead-carrier 2 in its position of work.

Head 19 is now in a position corresponding to that illustrated on the left side of Fig. 1. It does not yet abut the forward edge of slot 3, but, in spite of this fact, head 19 and the associated member 17 can not drop forward from this position by sheer force of gravity, owing to their frictional contact with the wall of casing 1, caused by the washer 20 and the end of the member 17. In this connection attention is invited to the special formation of the shovel-shaped upper end of the member 17, which, in order to exert a resilient pressure against casing 1, has been bent outwardly, as shown in Figs. 11 and 12. It will further be noticed that the member 17 is provided with a slit 29, which extends from the rear end of slot 22 to the end of the shovel-shaped part of member 17 and separates the shovel-shaped part into two portions 30, which, owing to their outwardly bent formation, are slightly spread apart (see Fig. 11). In order to fasten the member 17 in the casing 1, it is slipped into it from the rear, whereupon, when the forward end appears at the opening 24, it is grasped by the fingers and pressed with its rear portion 30 against a slot 3 (see Fig. 14). After this a head 19 is inserted from the outside into the slot 3 and pushed, in the direction indicated by the arrow D, into the slit 29, while the member 17 is held in position through pressure exerted against it from the outside, in the direction of the arrow C. During this operation the lateral edges of the slit 29 engage in the grooves 21 of head 19 until the slot 22 has been reached, whereupon, after slit 29 has closed behind head 19, backward movement of the latter is blocked by the rear edge 28. After head 19 has thus been arranged in position, it is now pulling the shovel-shaped end of member 17 against the inside, and consequently also the washer 20 against the outside of casing 1, whereby a resilient pressure is exerted against casing 1 by the outwardly turned shovel-shaped end of the member 17. It is due to this permanent resilient pressure of the shovel-shaped portions 30 against casing 1 that the slide-head 19, as well as the lead-carrying parts 17 and 2, find in the casing a reliable hold, which prevents them from changing their position by force of gravity without the provision of special retaining means.

It is understood that, instead of making the washers 20 from metal, they may also be produced from any other suitable material, and, for convenience in identifying the lead-carriers, the color of the material of the washers may be varied according to the color of the lead of the associated lead-carrier.

The shaft-like forward portions of the lead-carrying members 17 and the lead-carriers 2 constitute an organic entity or group, inasmuch as the shafts do not only serve as a bearing in which the lead-carriers are rotatably mounted, but also form the guide-way for the feed-spindles 31 of the leads. The lead-carrier 2 abuts with its annular shoulder 32 the forward end of the shaft 17 (see Fig. 1), in which it is rotatably secured in position by means of two sheet-metal flaps 33, cut from the walls of the shaft and depressed upon the lead-carrier as at 34 (see Fig. 2). The rear end of the lead-carrier is provided with an interior threading 35, in which engages the feed-spindle 31, which is adjusted in proper position within the lead-carrier through turning of the forward end of the lead-carrier. In order to secure the feed-spindle against rotation, it is provided at its rear-end with a non-round member 36, which also serves as a means for guiding the feeding movement of the feed-spindle within the three-quarter-tube of the shaft.

Manifestly variations may be resorted to and parts and features may be modified or used without others within the scope of the appended claims.

What I claim as new and desire to secure by Letters Patent of the United States, is:

1. In a pencil comprising an outer casing having a plurality of longitudinal slots in the wall thereof, the combination of a corresponding plurality of lead carriers movable within the casing from a rearward idle position to a forward working position; a stop member mounted on the rear end of each lead carrier and movable therewith; spring supported locking means for each of said lead carriers in said casing including a spring arm secured by the rear end thereof to the rear end of the pencil and having a resilient free forward end thereon extending into the shifting path of the stop member of each respective lead carrier and adapted to lock the latter in rearward or forward position by means of the stop member; a locking member upon the resilient free forward end of each spring arm adapted to perform the locking function and disposed in effective position to cooperate with and be displaced toward the central axis of said pencil by the stop member of the respectively associated lead carrier; and operating means for each of said lead carriers slidably disposed in the longitudinal slots of said casing and adapted to temporarily disengage the stop member of the respective lead carrier involved from locked position and to shift said stop member and its associated lead carrier thus released from one locked end position to the other locked end position by longitudinal shifting in a substantially straight path in one of said longitudinal slots in the same direction in which said associated lead carrier is to be moved.

2. In a pencil comprising an outer casing having a plurality of longitudinal slots in the wall thereof, the combination of a corresponding plurality of lead carriers movable within the casing from a rearward idle position to a forward working position; a stop member mounted on the rear end of each lead carrier and movable therewith; spring supported locking means for each of said lead carriers in said casing including a spring arm of stepped formation secured by the rear end thereof to the rear end of the pencil and forming a resilient forward step portion extending into the shifting path of the stop member of each respective lead carrier; a locking member upon the step portion of each spring

arm disposed in effective position to cooperate with the stop member of the respective lead carrier, each spring arm being mounted in said casing in such manner that each locking member provided with a respectively associated forwardly extending step portion recedes toward the central axis of said pencil in order to provide sufficient space for the shifting movement of the respective cooperating stop member of the lead carrier involved.

3. In a pencil comprising an outer casing having a plurality of longitudinal slots in the wall thereof, the combination of a corresponding plurality of lead carriers movable within the casing from a rearward idle position to a forward working position; a stop member mounted on the rear end of each lead carrier and movable therewith; spring supported locking means for each of said lead carriers in said casing, each lead carrier having a longitudinal slot in the rear portion thereof; said spring supported locking means being in each case effectively disposed with respect to the stop member of each lead carrier to lock the latter in its forward or rearward position by means of the stop member; and operating means for each of said lead carriers slidably disposed in the longitudinal slots of said casing and adapted to temporarily disengage the stop member of the respective lead carrier involved from locked position and to shift said stop member and its associated lead carrier thus released from one locked end position to the other locked end position by longitudinal shifting in a substantially straight path in one of said longitudinal slots in the same direction in which said associated lead carrier is to be moved.

4. In a pencil comprising an outer casing having a plurality of longitudinal slots in the wall thereof, the combination of a corresponding plurality of lead carriers movable within the casing from a rearward idle position to a forward working position; a stop member mounted on the rear end of each lead carrier and movable therewith; spring supported locking means for each of said lead carriers in said casing including a spring arm secured by the rear end thereof to the rear end of the pencil and having a resilient free forward end thereon extending into proximity of the sifting path of the stop member of each respective lead carrier and adapted to lock the latter in rearward or forward position by means of the stop member; a locking member upon the resilient free forward end of each spring arm bent from two sheet metal flaps on said spring arm and projecting into said shifting path of said stop member of the respective lead carrier involved; and operating means for each of said lead carriers slidably disposed in the longitudinal slots of said casing and adapted to temporarily disengage the stop member of the respective lead carrier involved from locked position and to shift said stop member and its associated lead carrier thus released from one locked end position to the other locked end position by longitudinal shifting in a substantially straight path in one of said longitudinal slots in the same direction in which said associated lead carrier is to be moved.

5. In a pencil comprising an outer casing having a plurality of longitudinal slots in the wall thereof, the combination of a corresponding plurality of lead carriers movable within the casing from a rearward idle position to a forward working position; a stop member mounted on the rear end of each lead carrier and movable therewith; spring supported locking means for each of said lead carriers in said casing including a plurality of spring arms individually provided at the forward ends thereof with a locking member and at one side of the rear ends having a lateral recess and also carrying upon the opposite sides a lateral projection adapted to engage in each case in the recess of the respectively adjacent spring arm, each locking member on each spring arm being disposed in effective position to cooperate with and be displaced toward the central axis of said pencil by the stop member of the respectively associated lead carrier; and operating means for each of said lead carriers slidably disposed in the longitudinal slots of said casing and adapted to temporarily disengage the stop member of the respective lead carrier involved from locked position and to shift said stop member and its associated lead carrier thus released from one locked end position to the other locked end position by longitudinal shifting in a substantially straight path in one of said longitudinal slots in the same direction in which said associated lead carrier is to be moved.

6. In a pencil comprising an outer casing having a plurality of longitudinal slots in the wall thereof, the combination of a corresponding plurality of lead carriers movable within the casing from a rearward idle position to a forward working position; a stop member mounted on the rear end of each lead carrier and movable therewith; spring supported locking means for each of said lead carriers in said casing including a plurality of spring arms individually provided at the forward ends thereof with a forwardly disposed step formation disposed at the forward end of each to form a locking member and at the side of each having a lateral recess and carrying at the opposite side of each a lateral projection adapted to engage in the recess of the respectively adjacent step portion; an annular sleeve inserted into the rear end of said casing to clamp and secure the rearmost step portions of said spring arms to the rear end of said pencil, said rearmost step portions of said spring arms being curved and designed with the radius of their curvature slightly exceeding the length of said annular sleeve externally and that of said casing internally in order to ensure a resilient frictional fit of said spring portions between said annular sleeve and said casing; and operating means for each of said lead carriers slidably disposed in the longitudinal slots of said casing and adapted to temporarily disengage the stop member of the respective lead carrier involved from locked position and to shift said stop member and its associated lead carrier thus released from one locked end position to the other locked end position by longitudinal shifting in a substantially straight path in one of said longitudinal slots in the same direction in which said associated lead carrier is to be moved.

7. In a pencil comprising an outer casing having a plurality of longitudinal slots in the wall thereof, the combination of a corresponding plurality of lead carriers movable within the casing from a rearward idle position to a forward working position; a stop member mounted on the rear end of each lead carrier and movable therewith; spring supported locking means for each of said lead carriers in said casing including a plurality of spring arms individually provided at the forward ends thereof with a locking member and at the rear ends thereof to the rear end of said pencil, said spring arms being mutually so designed and dis-

posed that the step portions thereof recede toward the central axis of said pencil and so that a laterally closed cylindrical opening is formed between their rearmost step portions; an elastic member elastically fitted into said cylindrical opening and supported in position by the annular shoulder formed by the receding walls of the adjacent step portions, with the result that a magazine for spare leads is formed between said rearmost step portions; and operating means for each of said lead carriers slidably disposed in the longitudinal slots of said casing and adapted to temporarily disengage the stop member of the respective lead carrier involved from locked position and to shift said stop member and its associated lead carrier thus released from one locked end position to the other locked end position by longitudinal shifting in a substantially straight path in one of said longitudinal slots in the same direction in which said associated lead carrier is to be moved.

8. In a pencil comprising an outer casing having a plurality of longitudinal slots in the wall thereof, the combination of a corresponding plurality of lead carriers movable within the casing from a rearward idle position to a forward working position; a stop member mounted on the rear end of each lead carrier and movable therewith; spring supported locking means for each of said lead carriers in said casing including a spring arm secured by the rear end thereof to the rear end of the pencil and having a resilient free forward end thereon extending into the shifting path of said stop member, said forward end of said spring arm in each case having a locking member projecting into the shifting path of said stop member and a shovel-shaped downwardly directed tip, and furthermore having rearwardly a longitudinal slot; operating means for each of said lead carriers slidably disposed in the longitudinal slots of said casing and adapted to temporarily disengage the stop member of the respective lead carrier involved from locked position and to shift said stop member and its associated lead carrier thus released from one locked end position to the other locked end position by longitudinal shifting in a substantially straight path in one of said longitudinal slots in the same direction in which said associated lead carrier is to be moved; and a pointed edge upon said operating means consisting of two oppositely inclined edges adapted not only to extend through a longitudinal slot of said casing but also through a longitudinal slot in the rear portion of one of said lead carriers in order to be caught up by the shovel-shaped tip of the spring arm respectively involved and thus to be guided to the locking member on said spring arm in order to displace the latter from its locking position during the first stage of a shifting movement, prior to and in order to shift said lead carriers from one locked end position to the other locked end position.

9. In a pencil comprising an outer casing having a plurality of longitudinal slots in the wall thereof, the combination of a corresponding plurality of lead carriers movable within the casing from a rearward idle position to a forward working position; a stop member rigid with the rear end of each lead carrier and formed from two lateral sheet metal flaps bent toward each other and presenting a gap between their inwardly directed longitudinal edges, said rear end of each lead carrier having a longitudinal slot parallel to the mentioned gap; operating means for each of said lead carriers slidably disposed in the longitudinal slots of said casing and adapted to temporarily disengage the stop member of the respective lead carrier involved from locked position and to shift said stop member and its associated lead carrier thus released from one locked end position to the other locked end position by longitudinal shifting in a substantially straight path in one of said longitudinal slots in the same direction in which said associated lead carrier is to be moved; and a pointed edge portion having two oppositely inclined edges adapted not only to extend through a longitudinal slot in said casing but also through a corresponding longitudinal slot in the rear end of said lead carrier and also through the gap in the respectively associated stop member in order to displace the spring supported locking means during the first stage of the shifting movement from locked position prior to and in order to shift the respective lead carriers involved from one locked end position to the other locked end position.

10. In a pencil comprising an outer casing having a plurality of longitudinal slots in the wall thereof, the combination of a corresponding plurality of lead carriers movable within the casing from a rearward idle position to a forward working position; a stop member mounted on the rear end of each lead carrier and movable therewith; spring supported locking means for each of said lead carriers in said casing and having a longitudinal slot in the rear end of each; a locking member upon the resilient free forward end of each spring arm mounted upon each lead carrier extending into the shifting path of the stop member of each respective lead carrier and adapted to lock the latter in rearward or forward position by means of said stop member, said operating means including a slide member formed with lateral grooves by which said slide member is slidingly engaged and prevented from dropping out of the pencil by engagement in the longitudinal slot in the rear end of the lead carrier involved; a washer upon each slide member interposed between the outer surface of said casing and outer portions of said slide member mutually overlapping in order to prevent said slide member from dropping freely into said casing, said washer being optionally of a color selected according to the color of the lead carried by the associated lead carrier.

11. In a pencil comprising an outer casing having a plurality of longitudinal slots in the wall thereof, the combination of a corresponding plurality of lead carriers movable within the casing from a rearward idle position to a forward working position; a stop member mounted on the rear end of each lead carrier and movable therewith; spring supported locking means for each of said lead carriers in said casing; a shovel-like rear end upon each lead carrier having a longitudinal slot and a correspondingly opposite slit forming a substantially straight extension thereof from the rear end of said slot to the rear end of said shovel-like rear end of said lead carrier so as to subdivide the latter into two substantially equal and slightly outwardly bent portions spread apart; said operating means including a slide member provided with lateral grooves and adapted to be inserted with its grooved portion into a corresponding longitudinal slot in the wall of said casing and to be pushed by means of said grooved portion through said slit into said central longitudinal slot in said shovel-like end portions of the respectively involved lead carriers in order to be slidably retained in said longitudinal slot of the latter by the rear edge thereof and the lateral edges with the result that said outwardly bent

shovel-like end portions of said lead carriers are resiliently held against the inner wall of said casing.

12. In a pencil comprising an outer casing having a plurality of longitudinal slots in the wall thereof, the combination of a corresponding plurality of lead carriers movable within the casing from a rearward idle position to a forward working position, including in each case a shovel-like rear portion, a shaft-like forward portion forming a three-quarter tube provided with two lateral sheet metal flaps cut from the walls of the shaft and directed inwardly into the hollow interior of the latter, a tube-like lead carrier proper having an enlarged forward position terminating in a tapered tip and a rear portion of relatively smaller diameter and internally threaded and externally designed to fit into said three-quarter tube shaft in effective position to be rotatably secured therein by the inwardly directed sheet metal flaps in such manner that the intermediate portion between the enlarged forward portion and the rear portion of relatively smaller diameter upon said lead carrier proper abuts the forward end of said three-quarter tube shaft; a feed spindle for the leads slidably mounted in the hollow interior of said three-quarter tube shaft and having a tail member serving to secure against rotation and adapted to engage in said interior thread upon said lead carrier proper through rotation of the forward end of said lead carrier in order to feed the leads forwardly into working position; and operating means for each of said lead carriers slidably disposed in the longitudinal slots of said casing and adapted to temporarily disengage the stop member of the respective lead carrier involved from locked position and to shift said stop member and its associated lead carrier thus released from one locked end position to the other locked end position by longitudinal shifting in a substantially straight path in one of said longitudinal slots in the same direction in which said associated lead carrier is to be moved.

13. In a pencil comprising an outer casing having a plurality of longitudinal slots in the wall thereof, the combination of a corresponding plurality of lead carriers movable within the casing

from a rearward idle position to a forward working position; a stop member mounted on the rear end of each lead carrier and movable therewith; spring supported locking means for each of said lead carriers in said casing including a spring arm secured by the rear end thereof to the rear end of the pencil and having a resilient free forward end thereon; a locking member upon the resilient free forward end of each spring arm extending into the shifting path of the stop member of each lead carrier and adapted to lock the latter in rearward or forward position by means of the stop member, the locking member on each spring arm being disposed in effective position to cooperate with and be displaced toward the central axis of said pencil by the stop member of the respectively associated lead carrier, the casing being provided at the rear end with a magazine for spare leads; a closure member upon said casing for said magazine of such projecting exposed form that the visible outer portion thereof is accessible to be coated with a shell of precious metal or the like by merely slipping said shell onto said closure member and folding it around the edges; and operating means for each of said lead carriers slidably disposed in the longitudinal slots of said casing and adapted to temporarily disengage the stop member of the respective lead carrier involved from locked position and to shift said stop member and its associated lead carrier thus released from one locked end position to the other locked end position by longitudinal shifting in a substantially straight path in one of said longitudinal slots in the same direction in which said associated lead carrier is to be moved.

AUGUST WILHELM AUGENSTEIN.

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