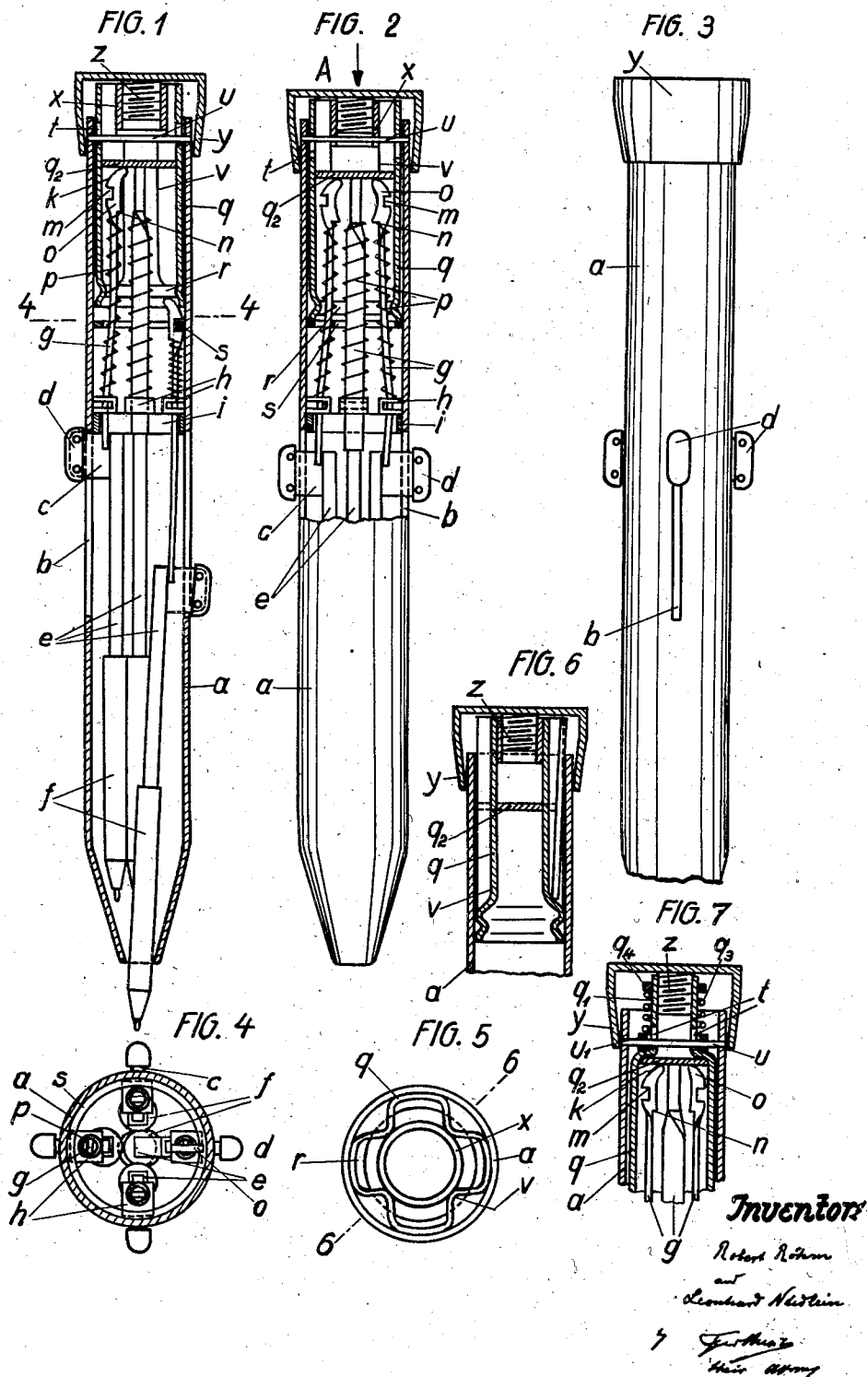


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R. RÖHM ET AL
MULTIPLE LEAD PENCIL
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MULTIPLE LEAD PENCIL

Robert Röhm, Pforzheim-Brotzingen, and Leonhard Neidlein, Pforzheim, Germany, assignors, by mesne assignments, to Norbert Bernheimer, Karlsruhe, Baden, Germany

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9 Claims. (Cl. 120—14)

The invention relates to a multiple lead pencil, the lead carriers of which are brought into the writing position by means of push buttons adapted to move in longitudinal slots in a sleeve-like casing and to be pulled back into the inoperative position by means of spiral springs.

In the known pencils of this kind the detachable securing of the lead carriers in the writing position is effected either by engaging the neck of the push button into a lateral extension at the front end of the longitudinal slot or by a separate button acted upon by a thin blade spring engaging into a hole in the casing, the extension of which hole transversely to the pencil axis being greater than that of the longitudinal slots.

These known means for securing the lead carriers in their position have the inconvenience that for returning the latter into the inoperative position a knob has to be actuated in any case with the finger, that is in the one form of construction a push knob and in the other form of construction a tiny locking knob. The releasing is therefore complicated, not to mention that the arrangement of lateral extensions of the longitudinal slots, or of separate engaging holes in the casing seriously prejudices the good and uniform appearance of the latter.

These inconveniences are obviated by the invention.

The novelty consists in the arrangement of notches in the rear portion of the pencil-casing, of an inclined edge on the rear end of the lead carriers and of a sleeve which is shiftable relative to the casing in opposition to the action of a spring so that by its front end the edge of the notch in the lead carrier advanced into the writing position pressed by the force of the compressed return spring against the notch, can be brought out of the range of the notch, whereupon the lead carrier can be returned into the inoperative position by its return spring.

Two embodiments of the invention are illustrated, by way of example, in the accompanying drawing in which—

Fig. 1 shows a longitudinal central section of the multiple lead-pencil with a lead carrier in position for writing.

Fig. 2 is a similar view as Fig. 1, only the rear portion of the pencil being in section, the front portion in elevation and all lead carriers being in the position of rest.

Fig. 3 shows the multiple lead-pencil in elevation.

Fig. 4 is a cross-section on line 4—4 of Fig. 1.

Fig. 5 is a rear end view, the cover being removed.

Fig. 6 shows the rear end of the multiple lead-pencil in longitudinal central section on line 6—6 of Fig. 5 and

Fig. 7 is a similar longitudinal section showing a modified form of construction.

The sleeve-like casing *a* has longitudinal slots *b*, in which the necks *c* of the push knobs *d* can move. The latter are fixed on stems *e* which on the one end carry the lead carriers *f* and at the other end a blade spring *g*, the latter being shiftable mounted in brackets *h* resting upon a ring *i* arranged in the casing. The blade springs *g* have each on the rear end a knob *o* having an inclined surface *k* at the rear portion, an incision *m* and an abutment *n*. Spiral-shaped wires *p* serving as return springs are placed one around each blade spring *g* and bear at the one end against the corresponding bracket *h* and at the other end against the abutment *n* of the corresponding knob *o* with preliminary tension also if the lead carrier is in the position of rest. A sleeve *q* is pushed over the rear ends of the blade springs *g* and has, near its front end, an inwardly directed circular bead *r* which touches the inclined plane *k* of the knob *o* of that lead carrier *f* which is just in writing position, provided the sleeve *q* is pushed-in sufficiently far. The bead *r* thus pushes off the retaining ring *s* the incision *m* of the push knob *o* of the lead carrier *f* which has been pushed forward so that this liberated lead carrier *f* is returned into the position of rest by the action of the return spring *p*. For limiting the shifting movements the detaching sleeve *q* has at the rear end two short longitudinal slots *t* through which projects a transverse pin *u*, the ends of which are fixed in the sleeve-like casing *a*. By the arrangement of longitudinal grooves *v* in the detaching sleeve *q* containers for holding spare leads *w* (Fig. 6) are provided between the sleeve *c* and the casing *a*. A short tube *x* is soldered into the detaching sleeve *q* and has a female thread into which a screw-threaded bolt *z* fixed on a cover *y* can be screwed.

Instead of fixing this separate short tube *x* in the detaching sleeve *q*, the rear end of this sleeve *q* may be set off to form a cylindrical internally threaded tube *q*₁ (Fig. 7), and designed to receive the bolt *z* of the cover *y*. In the position of rest the knobs *o* of the blade springs *g* are pressed against a transverse partition *q*₂ under the influence of the spiral wires *p*. As always one or several lead carriers *f* are in the position of rest, the detaching sleeve *q* is permanently

held in the pushed back position (Fig. 1) by the force of one or several wire spiral springs *p* and can be brought into the pushed-forward position only by special pressure exerted upon the cover *y* in the direction of the arrow *A* (Fig. 2), in which position the bead *r* lifts off the rest ring *s* the knob *o* of the lead carrier *f* which is just in writing position.

The handling of the multiple lead-pencil is very simple. The lead carrier *f* to be used for writing is pushed into the writing position by means of its shiftable knob *d*, no pressure being exerted upon the cover *y* in order that the knob *o* of the blade spring *g* be not prevented by the bead *r*, in the pushed forward position, to engage its notch *m* automatically, that is by self-resiliency, over the ring *s*. If the advanced lead carrier *f* has to be returned into the position of rest a short pressure in the direction *A* exerted with the hand upon the support will cause shifting of the detaching sleeve *q*. If in this instance a greater spring force than that of two wire spiral springs *p* has to be overcome, a spiral spring *q₃* is wound around the cylindrical set off end *q₁* of the detaching sleeve *q* (Fig. 7), said additional pressure spring being fixed at the one end on a ring *q₄* fixed on the short tube *q₁* and its other end bears against a ring *u₁* which is carried by the transverse pin *u* and thus acts against the shifting of the detaching sleeve *q* and of the cover *y* carried by the latter.

We claim:

1. A multiple lead-pencil, comprising in combination an outer metal casing having a plurality of longitudinal slots distributed around its periphery, brackets projecting inwards said casing at an intermediate point of the length of this casing, a plurality of lead carriers slidable in the casing, a plurality of stems one extending from the rear end of each carrier, a plurality of elements one guided in each of said brackets and each connected to the rear end of one of said stems, catches one on the rear end of each of said elements, knobs one projecting radially from each of said stems through one of the slots in said casing for selectively advancing one of said carriers into operative position, a rest ring in said casing below said brackets and the rear end of said casing and destined to engage said catches and hold said carriers in their advanced operative position, a spring influenced detaching sleeve shiftable in the rear end of said casing to disengage said catches from said rest ring, and return springs one on each of said elements between said catches and said brackets, said springs adapted to be compressed during the movement of said pencil carriers into their operative position and to automatically return said carriers into their inoperative position on the disengagement of said catches from said rest ring.

2. A multiple lead-pencil as specified in claim 1, in which each catch has an incision intermediate its length and an inclined plane at its rear end adapted to bear against the front end of the detaching sleeve and move said catch inwards to disengage the rest ring from said incision.

3. A multiple lead-pencil as specified in claim 1, in which each catch has an incision intermediate its length designed to engage with the rest ring, and an inclined plane at its rear end, and the detaching sleeve has an inwardly directed bead at its front end adapted to bear against said inclined plane and press inwards said catch out of engagement with said rest ring.

4. A multiple lead-pencil as specified in claim 1, in which each of the elements at the rear ends of the lead carriers is resilient and tends to resiliently press its catch against the inner side of the casing, and each of said catches has on its front end a shoulder forming an abutment for the rear end of a return spring.

5. A multiple lead-pencil as specified in claim 1, in which the rest ring is fixed on the inner side of the casing and the elements carrying the catches are blade springs and resiliently press said catches into engagement with said ring to lock a carrier in operative position.

6. A multiple lead-pencil as specified in claim 1, in which a transverse partition arranged in the detaching sleeve forms an abutment for the catches in their inoperative position, and a cap on the rear end of said sleeve covering the rear end of the casing.

7. In a multiple lead-pencil as specified in claim 1, a narrowed cylindrical portion formed on the rear end of the detaching sleeve, a collar on the rear end of said cylindrical portion, a ring supported by the casing and surrounding the front end of said cylindrical portion, and a helical spring surrounding said cylindrical portion and bearing at one end against said collar and at its other end against said ring said spring adapted to maintain said sleeve in its rearward inoperative position.

8. A multiple lead-pencil as specified in claim 1, in which the detaching sleeve fits and conforms with the inner side of the casing and has longitudinal grooves extending from its rear end to within a short distance of its front end forming with the inner side of the casing a magazine for spare leads.

9. A multiple lead-pencil as claimed in claim 1, in which the detaching sleeve has diametrically opposite guide slots, and a transverse abutment pin in said casing extending through said slot to limit the relative movement between said casing and said detaching sleeve.

ROBERT RÖHM.
LEONHARD NEIDLEIN.