May 4, 1926. 1,583,718

G. R. HUDSON

PROPELLER PENCIL

Filed Feb. 5, 1923

FIG. 1.

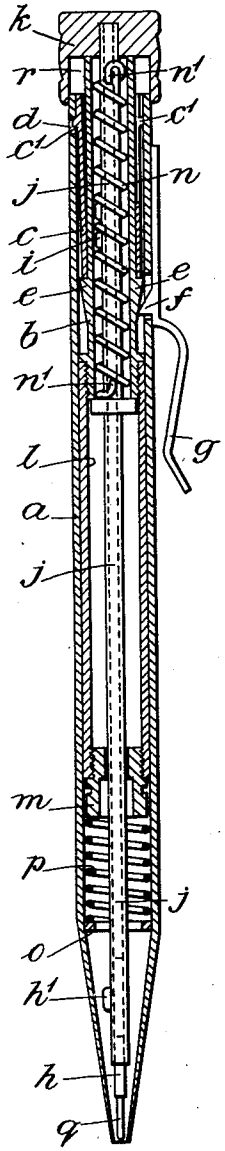


FIG. 4.

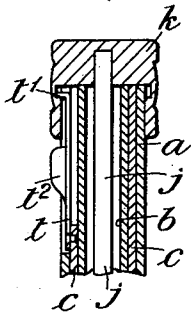
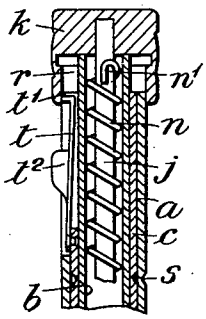


FIG. 3.



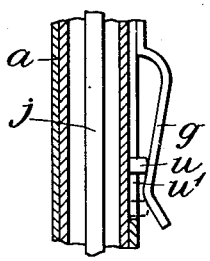
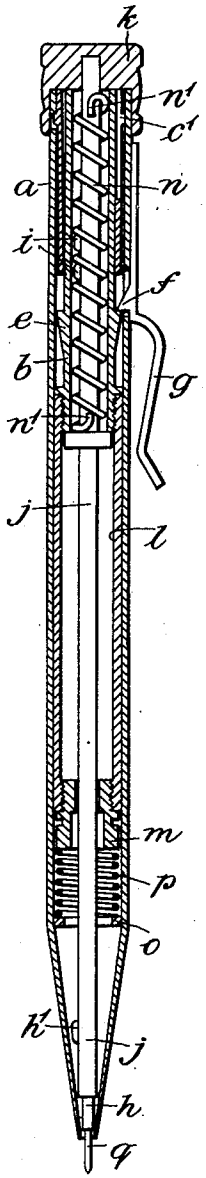


FIG. 5.

FIG. 2.



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UNITED STATES PATENT OFFICE.

GEORGE REGINALD HUDSON, OF LONDON, ENGLAND.

PROPELLER PENCIL.

Application filed February 5, 1923. Serial No. 617,089.

To all whom it may concern:

Be it known that I, GEORGE REGINALD HUDSON, engineer, a subject of the King of Great Britain, of Kimberley House, Holborn Viaduct, London, England, have invented a new and useful Improvement in or Relating to Propeller Pencils, of which the following is a specification.

This invention relates to pocket pencils of the propelling type and has for its object to provide an improved construction and arrangement thereof.

According to the present invention a propelling pencil in which the propelling mechanism and lead are moved back and forth in an outer casing to protrude and retract the lead is characterized amongst other improved features hereinafter set forth, in that the means for locking the propelling mechanism and lead in the forward position is released or retracted independently of the means for effecting the forward movement of said mechanism and lead. For example, the internal propelling mechanism and lead may be pushed forward by an end cap, and held in the forward position and released therefrom by a catch device which is operated by or forms part of a pocket clip or guard or is operated by a knob or device mounted on or projecting through the side of the outer casing.

In the accompanying drawings,

Figs. 1 and 2 are longitudinal sections showing one construction of the improved mechanism in the retracted and forward positions respectively.

Figs. 3 and 4 are similar but partial views showing a modified form of locking and releasing catch, and

Fig. 5 is a section showing a further modification.

In Figures 1 and 2, *a* is the outer casing in which is fitted a tube *b* enclosing the lead propelling mechanism, the tube *b* is releasably secured in the casing *a* by lateral segmental projections *c'* on a tapered sleeve *c*, which sleeve is slit at its upper end to render it resilient and so that one or other of the said projections will engage with a circumferential slot *d* in the casing *a*. On the tube *b* is a coned stop *e* adapted to be engaged by and coact with a spring catch *f* which in this construction forms part of the guard or pocket clip *g*.

The propelling mechanism enclosed within the tube *b* comprising a lead carrier *h* provided with a projection or key *i* adapted to travel in the slotted tube or sheath *j* which is secured to a cap *k* fitted so as to slide up and down upon the outer end of the casing *a*. Surrounding the sheath *j* beyond the forward end of the propelling mechanism and carried by the tube *b* is a tube *l* forming a container for refill leads; the said container is closed at its lower end by a removable plug or cap *m* through which the sheath *j* passes.

Between the tube *b* and sheath *j* is a coil *n* which engages the key *i*, the ends of the coil being bent over as at *n'* to form stops for the key.

The forward end of the casing *a* is provided with a collar *o* and between the said collar and the cap *m* is placed a coil spring *p* adapted to retract the internal mechanism and lead when the catch *e* is released.

Assuming the parts to be shown in Fig. 1 the pencil lead *p* lies within the casing *a* and there is a small gap *r* between the cap *k* and the casing *a*. When it is desired to use the pencil the cap *k* is pushed in so that the coned catch *e* engages the catch *f* carried by the spring pocket clip *g* as shown in Fig. 2; by this movement of the cap the internal mechanism is moved forward as a whole against the spring *p* and the pencil point protrudes from the casing *a*.

On the lead becoming worn the lead carrier *h* is propelled by rotating the cap *k* which carries the slotted tube *j* whereupon the key *i* travels along the coil *n* pushing out the carrier and lead. Should any attempt be made to overwind the mechanism the key *i* engages either of the stops *n'* and winds up the coil *n* until the friction between the said coil and the tube *b* in which it lies is overcome when the coil slips in the tube.

When it is desired to retract the mechanism so that the lead lies within the casing *a* so as to protect the point, the spring clip *g* is lifted and the mechanism is shot back or retracted by the spring *p*. The lifting of the catch *f* is effected in the construction shown in Figs. 1 and 2 by the pocket clip or guard *g*, which is automatically lifted when placed over the edge of the user's pocket.

The lead carrier *h* is provided with a sliding lead ejector *h'*.

The retracting mechanism may be used for other pencil mechanism to that shown.

The catch mechanism may be released by hand pressure, for example, as in the modified construction shown in Figs. 3 and 4, in which the tube *b* carrying the propelling mechanism is releasably retained in the casing *a* by means of a sleeve *c* which in this case is held in place by a snap catch consisting of a nib *s* engaging with an annular groove in the said sleeve, and the catch for locking the propelling mechanism in the forward position consists of a spring tongue *t* secured to the sleeve *c* and provided at its upper end with a projection *t'* adapted to engage with an annular groove *k'* formed in the interior of the sliding end cap *k*.

The construction is otherwise similar to Figs. 1 and 2, and when it is desired to retract the mechanism within the casing *a* the spring tongue *t* is pressed inwards by means of its finger piece t^2 and thus releases the cap *k* and the mechanism is retracted by the spring *p* as in the previous example.

Fig. 5 shows another modified construction wherein the retracting spring *p* of the other constructions is dispensed with and the internal mechanism is held in the forward position by the pocket clip *g* which in this position engages the upper side of a knob *u* which is adapted to slide in a longitudinal slot *u'* in the casing *a*.

In this construction the internal mechanism carrying the lead is released and retracted by the pocket of the user when the pencil is placed therein, by which act the edge of the pocket engages the underside of the clip *g* and the projecting knob *u* and carries the latter along its slot to the retracted position.

What I claim as my invention and desire to secure by Letters Patent is:—

1. A propelling pencil comprising an outer case fitted with a pocket clip and having an internal lead propelling mechanism adapted to be slidden back and forth in the outer case and locked in the forward or writing position by a locking catch in combination with means for operating the locking catch from the pocket clip by the opening movement thereof.

2. A propelling pencil comprising an outer case fitted with an internal lead propelling mechanism adapted to be slidden back and forth in the outer case and locked in the forward or writing position by a locking catch and a pocket clip anchored at one end on said outer case in combination with means operatively associated with the free end of said pocket clip and the locking catch whereby the said locking catch is automatically released by the outward movement of the pocket clip as when being placed over the edge of a pocket.

3. A propelling pencil comprising an outer case fitted with an internal lead propelling mechanism adapted to be slidden back and forth in the outer case to retract or protrude the lead a pocket clip anchored at one end on the outer case, a two-part locking catch for holding said propelling mechanism and lead in the forward position one part of said catch being carried on the propelling mechanism and the other on the free end of the pocket clip which is passed over the pocket whereby said locking catch is automatically released by the outward movement of said free end of the pocket clip when the latter is passed over the edge of a pocket.

4. A propelling pencil comprising an outer case an internal lead propelling mechanism means for sliding said lead propelling mechanism as a whole back and forth in the outer case to retract and protrude the lead, means for fastening the lead propelling mechanism in the outer case consisting of a sleeve split into segments each provided with a projection and a slot in the outer casing with which any one of the said projections may engage so as to be released by pressure from outside the case, a pocket clip anchored at one end on the outer case, a two-part locking catch for holding said lead propelling mechanism in the forward position, one part of said locking catch being carried on the propelling mechanism and the other on the free end of the pocket clip which is passed over the edge of the pocket and whereby said locking catch is automatically released by the outward movement of said free end of the clip in the act of placing same over the edge of a pocket.

5. A propelling pencil comprising an outer case an internal lead propelling mechanism means for sliding said lead propelling mechanism as a whole back and forth in the outer case to protrude and retract the lead, means for fastening the lead propelling mechanism in the outer case consisting of a sleeve split into segments each provided with a projection, and a slot in the outer casing with which any one of the said projections may engage so as to be released by pressure from the outside, an annular chamber for refill leads formed by a tubular extension from said lead propelling mechanism around the lead carrying sheath, a

removable cap for said tubular refill chamber slidably fitted on said lead carrying sheath, a pocket clip anchored at one end on the outer case, a two part locking catch for holding said lead propelling mechanism in the forward position one part of said locking catch being carried on the propelling mechanism and the other on the free end of the pocket clip which is passed over the edge of the pocket and whereby said locking catch is automatically released by the outward movement of said free end of the clip in the act of placing same over the edge of a pocket.

GEORGE REGINALD HUDSON.