Dec. 22, 1925. 1,566,871

G. R. HUDSON

PROPELLER PENCIL

Filed Feb. 27, 1924

FIG. 1.

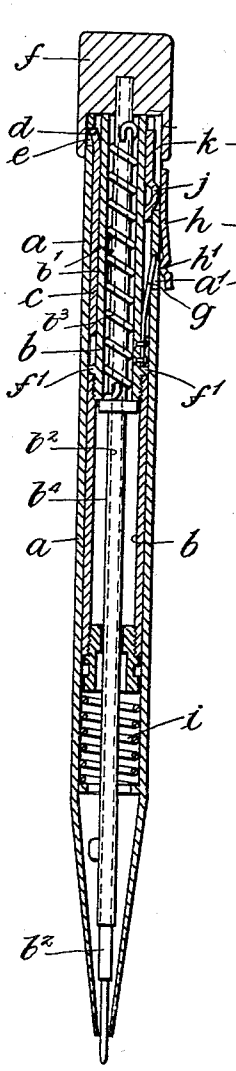


FIG. 3.

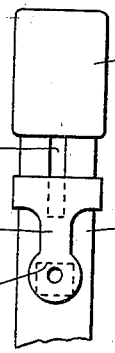
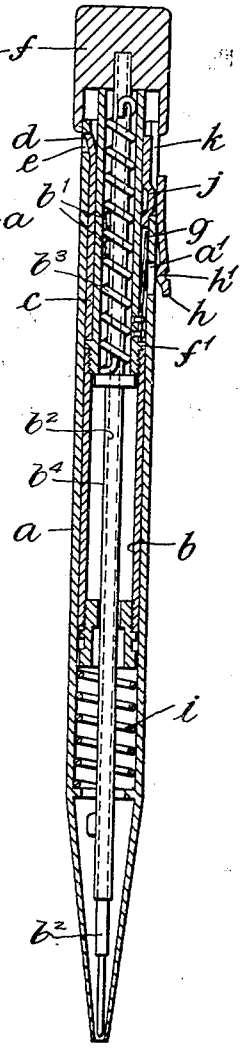


FIG. 2.



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UNITED STATES PATENT OFFICE.

GEORGE REGINALD HUDSON, OF LONDON, ENGLAND.

PROPELLER PENCIL.

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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 mechanical pencils of the propelling type wherein the propelling mechanism and lead are pushed forward in an outer casing against a spring by an end cap to protrude the lead and wherein the parts are locked in the forward position by a spring engaging with the outer casing and adapted to be released by the operation of a finger piece mounted on the outer casing.

It is the object of the present invention to provide an improved means for locking and releasing the parts of the pencil and holding the same in position.

The improved mechanical pencil embodies a propelling mechanism and lead carried by a tubular member and pushed forward in an outer casing against a spring by an end cap to protrude the lead, in combination with a sleeve mounted on the outer end of said tubular member and having a limited sliding movement thereon, a retaining catch on said sleeve coacting with an aperture in the outer casing, a locking catch mounted upon the inner tubular member and coacting in its forward position with an aperture in the outer casing, a finger piece mounted upon the exterior of the outer casing in such position as to be in operative engagement with said locking catch when depressed and whereby said catch may be released when required.

The locking catch may be in the form of a tongue mounted upon the tubular member and adapted to slide in a longitudinal slot in a sleeve within which the tubular member slides with a limited movement, the said tongue making locking engagement with the rear edge of an aperture in the outer casing, and being released therefrom by the depression of an external finger piece. The said sleeve may be releasably held in place by means of a tongue, formed by slitting the rear end of the tube, and adapted to engage with a hole in the casing in such manner as to be released by external pressure when it is desired to remove the internal propelling mechanism from the outer casing.

Referring now to the accompanying drawings which show one construction embodying the present invention,

Figs. 1 and 2 are longitudinal sections of the improved pencil showing the parts in the forward and retracted position respectively.

Fig. 3 is a face view of the upper portion of the pencil showing the finger piece in front elevation.

a is the outer casing, b is a tubular member carrying within it the lead propelling mechanism which in the example shown consists of a nib b' projecting from the lead carrying the tube b^2 and engaging with a spiral b^3 placed around a tube b^4 enclosing the lead carrying tube b^2, the tubular member b has a limited sliding movement within a sleeve c, which is formed with a longitudinal open ended slot c' and is releasably held in place in the outer casing a by a snap catch consisting of a resilient tongue d engaging with a hole e in the said outer casing. The resilient tongue d is formed by slitting the rear end of the tube for a suitable distance, and the movement of the tubular member b within the sleeve is limited by the ends of the said sleeve engaging the cap f on the one hand and a shoulder f' on the other.

The locking catch whereby the tubular member b is locked in the forward position and released therefrom consists of a rearwardly projecting spring tongue g mounted upon the side of the tubular member b and adapted to slide in the longitudinal slot c' in the sleeve c, the said spring tongue g is so arranged that in the forward position its end comes into locking engagement with the rear edge of an aperture a', formed in the outer casing a beneath the free end of a resilient finger piece h mounted upon the outside of the said outer casing a, the said finger piece h being preferably provided with a projecting nib h'.

A spring i is provided within the outer casing to retract the tubular member and the lead carried thereby when the locking catch is released.

To ensure the parts being accurately assembled a small projection j is provided on the sleeve c adapted to enter a guiding slot k in the outer casing a.

In use, and assuming the tubular member

b with the propelling mechanism to have been pushed forward by the end cap f and locked in position by the spring tongue g engaging with the aperture a' the parts will be as shown in Fig. 1. When it is desired to retract the mechanism and lead within the casing a the finger piece h is depressed which action presses the spring tongue g inwards out of engagement with the aperture a' when the spring i operates to retract the tubular member b with its propelling mechanism and lead, the locking tongue g slides in the longitudinal slot c' in the sleeve c and the parts will now be in the position shown in Fig. 2.

By inserting the finger nail in the hole e to depress and release the spring tongue d of the snap catch the internal mechanism can be readily pulled out for recharging or otherwise.

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

1. The improved mechanical pencil comprising the combination of an outer casing with open ended guiding slot at its rear end and a locking aperture, a coiled spring in the forward end of said casing, an inner tubular member carrying a propelling mechanism and provided with an end knob for rotatably operating said propelling mechanism and for pushing the tubular member forward against the coiled spring, said inner tubular member also having a rearwardly projecting locking tongue mounted on its side towards the rear end and coacting with the rear edge of the locking aperture in the outer casing, and intermediate sleeve having a limited sliding movement on said inner tubular member and provided with a projecting nib slidable in the guiding slot of the outer casing and also having a slot through which the locking tongue on the inner tubular member passes, means for releasably retaining said intermediate sleeve and the inner tubular member in the outer casing, a resilient finger piece mounted on the exterior of the outer casing and provided on the underside of its free end with a projecting nib coacting with the locking tongue to disengage the same from the locked position when said finger piece is depressed.

2. The improved mechanical pencil comprising the combination of an inner tubular member carrying a lead propelling mechanism and provided towards its rear end with a rearwardly projecting locking tongue, an outer casing provided with an open ended guiding slot extending inwards from its rear end, and a locking aperture, the rear edge of which coacts with said locking tongue, a spring in the forward end of said outer casing, an end knob for operating the propelling mechanism and pushing said tubular member forward against the said spring, an intermediate sleeve mounted on the rear end of said inner tubular member and having a limited sliding movement thereon means for releasably retaining said intermediate sleeve in the outer casing, a projecting nib on said intermediate sleeve slidable in the slot in the outer casing whereby the correct position of the assembled parts is assured, a slot in said intermediate sleeve through which the locking tongue on the inner tubular member passes to engage with the rear edge of the locking aperture in said outer casing, a resilient finger piece mounted on the exterior of the outer casing and provided on the underside of its free end with a projecting nib coacting with the said locking tongue in its locked position to disengage the same when the finger piece is depressed.

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