Dec. 12, 1950 C. R. HICKS 2,533,668

ADJUSTABLE ERASER FOR PENCILS

Filed Dec. 6, 1948

Fig. 1.

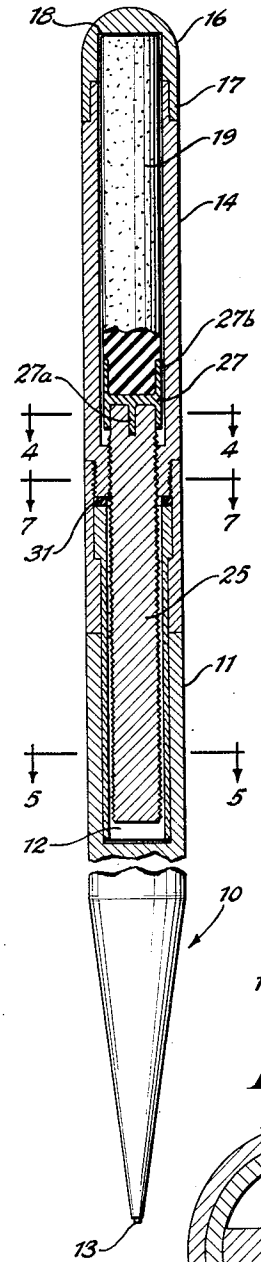


Fig. 2.

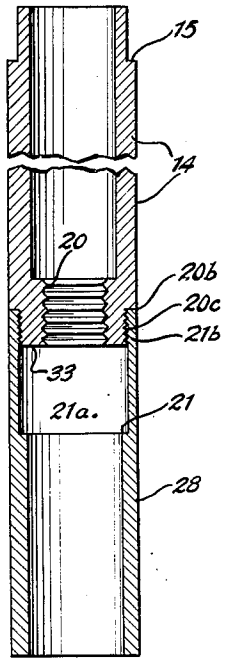


Fig. 3.

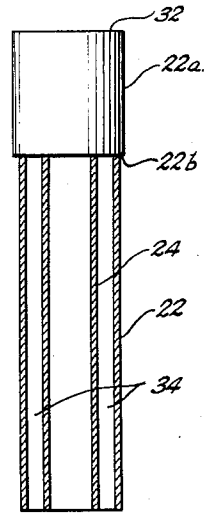


Fig. 4.

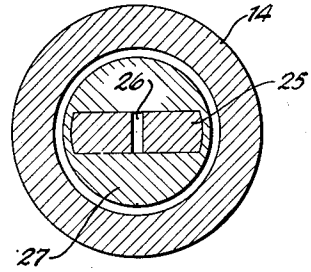


Fig. 5.

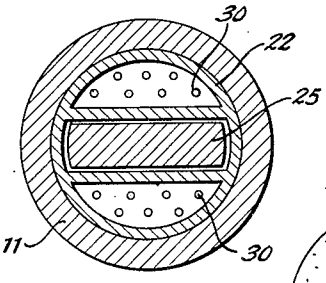


Fig. 6.

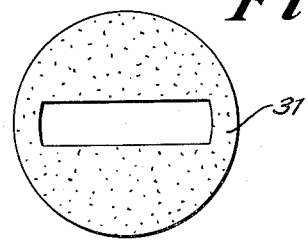
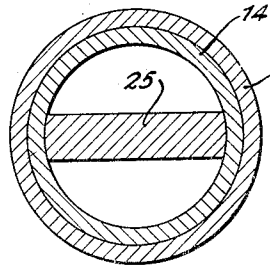


Fig. 7.



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ADJUSTABLE ERASER FOR PENCILS

Charles R. Hicks, Jackson, Miss.

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2 Claims. (Cl. 120—38)

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The present invention relates to mechanism for adjusting an eraser in a mechanical pencil.

An object of the present invention is to provide a mechanical pencil incorporating an eraser propelling mechanism so that a desired portion of the eraser may be quickly and easily projected for use.

A further object is to provide an adjustable eraser with a mechanical pencil so constructed and designed so as to provide an attractive pencil which is compact, durable and inexpensive.

In another of its aspects, the present invention relates to a mechanical pencil provided with a lower housing having a hollow portion in one end thereof, in combination with means for propelling an eraser comprising, a rotatable actuating member including two separable sections threadedly secured together and adapted to rotate as a unit, one of said sections having an internally threaded portion, screw means disposed in said internally threaded portion for axial movement therein, and a tubular liner within one of said sections and extending into and with its lower end affixed to and held firmly in the lower housing of the mechanical pencil, whereby rotation of said two sections as a unit axially, and holding in a steady position the lower housing of the mechanical pencil moves said screw means to propel an eraser suitably associated therewith.

Other and further objects and advantages of the present invention will be apparent from the following description thereof and from the claims appended thereto.

In the drawing wherein like numerals refer to like or corresponding parts throughout the several views;

Figure 1 is a fragmentary front elevation of a mechanical pencil, partly in section, and embodying the features of the present invention;

Figure 2 is an enlarged fragmentary sectional view of the actuating sections for propelling the eraser mechanism shown in Figure 1;

Figure 3 is an elevational view, partly in section, showing the liner adapted to fit within the pencil;

Figure 4 is a sectional view taken along line 4—4 of Figure 1, in the direction of the arrows;

Figure 5 is a sectional view taken along the line 5—5 of Figure 1, in the direction of the arrows;

Figure 6 is a view of the washer shown in Figure 1 of the drawing; and

Figure 7 is a sectional view taken along the line 7—7 of Figure 1, in the direction of the arrows.

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Referring now to the drawing, and more particularly to Figure 1 thereof, the numeral 10 generally represents a mechanical pencil including a lower section or housing 11 provided with a central opening 12, and also including conventional means for propelling lead 13 from the end of the pencil 10. As the lead propelling means forms no part of the present invention, per se, it has not been shown or described in detail, it being understood that the present invention embraces the use of any conventional lead propelling means known in the art.

The mechanical pencil 10 also comprises a tubular upper sleeve 14, which is cut away at the upper part thereof to provide an external shoulder 15. A top piece 16 fits over the tubular rotatable upper section 14, and is provided with a downwardly extending flange 17, having its end portion resting upon the shoulder 15 of the upper section 14 when the top 16 is in closed position. The top piece 16 is internally cut away as at 18, to provide a recessed portion into which an eraser 19 may be disposed, when the top piece 16 is in closed position.

Referring to Figure 2 of the drawing, the numeral 20 indicates an internally threaded portion at the lower inner end portion of the section 14. Section 14 is reduced at its lower outer end to provide a shoulder 20*b* and an externally threaded portion 20*c*.

An intermediate section 28 is positioned between the barrel or upper section 14 and section 11. Element 28 is internally cut away at the upper end thereof to provide an internal shoulder 21 below an internal area 21*a* having a diameter larger than the normal diameter of the tubular section 28 by an amount equal to the width of the internal shoulder 21. Element 28 is internally threaded at the upper portion 21*b* thereof and is adapted to threadedly engage the threaded portion 20*b* at the lower end of the upper section 14. The threaded section 21*b* at one end portion of the tubular intermediate sleeve 28, does not extend throughout the full dimensions of the area 21*a*.

As best shown in Figure 1 of the drawing, a liner 22 is disposed within the intermediate sleeve 28 and extends into and with lower part affixed and held firmly to the wall of the opening 12 in the upper portion of section 11 of mechanical pencil 10. Liner 22 is provided with an enlarged head portion 22*a*, and a marginal shoulder 22*b*. The enlarged head portion 22*a* of liner 22 fits in the area 21*a* in the upper portion of rotatable tubular intermediate section 28, with

the shoulder 22b resting against the internal shoulder 21 within section 28.

Within the liner 22, there is provided a casing 24 formed integral with or affixed in any suitable manner to the liner and which extends longitudinally within said liner 22 substantially throughout the length thereof, and surrounds an oblong screw shaft 25, which extends axially in the casing 24. The casing 24 is substantially oblong so that it will prevent the rotation of the screw 25. The oblong screw shaft 25 fits through the threaded element 20 in the lower portion of the upper section 14, with said oblong shaft 25 being split at the upper end thereof, as indicated by the numeral 26, so as to fit within a recessed portion in the lower part of an eraser holding element 27. The element 27, as shown, has a downwardly extending finger 27a which fits within the recess 26 in the upper portion of the oblong screw shaft 25 so that the eraser holding element 27 can be readily detached from the screw shaft 25, together with eraser 19 to permit the insertion of a new eraser holding element and a new eraser 19. The eraser 19 is secured to the eraser holding element 27 in any suitable manner, as by inserting the end of the eraser in a recess in the cap portion 27b of eraser holding element 27, so that the eraser 19 is under tension and cannot be easily removed from element 27.

As best shown in Figure 5 of the drawing, lead storage is provided so that extra pencil leads 30 are placed within the liner 22 between the inner wall of the liner 22 and the outer wall of the casing 24. A washer 31, as best shown in Figure 6 of the drawing, is placed in position, as shown in Figure 1, between the upper portion 32 of the enlarged head 21a of the liner 22 and the shoulder 33 which surrounds the internally threaded portion 20 of the upper section 14 of the mechanical pencil 10. The washer 31 prevents the leads 30 from accidentally slipping out of the lead storage chambers which I have generally indicated by the numeral 34.

It is to be noted that the section 14 is separable from section 28 by merely unscrewing one section from the other. The oblong screw shaft 25, which is held within the threaded portion in the lower part of section 14, may be placed in its position within the casing 24, and the two sections 14 and 28 may be united after disposing washer 31 in place.

In operation, it is to be noted that if the sections 28 and 14 are rotated as a unit, holding section 11 and consequently liner 22 in a steady position the oblong shaft 25 moves axially within the threaded element 20 to propel the eraser holding element 27 and the eraser 19 outwardly. A reversal of the rotation of sections 14 and 28, holding section 11 in steady position, will retract the eraser within the central bore of the upper section 14.

After the eraser 19 has been practically used up, a new eraser holding element 27 and a new eraser 19 can be inserted.

Various modifications of the present invention will be apparent to those skilled in the art without departing from the spirit thereof, and it is therefore desired to be limited only by the scope of the appended claims.

What I claim is:

1. For use with a writing implement having a lower housing provided with a hollow portion in the upper end thereof, an improved adjustable eraser comprising, an upper section provided at one end with a reduced externally threaded end portion and an internally threaded portion, an intermediate sleeve provided with an internally threaded end portion adapted to threadedly engage the externally threaded end portion of said upper section, a substantially oblong screw shaft disposed in the internally threaded portion of said upper section for axial movements therein, an eraser supporting member at one end of said oblong screw shaft for axial movement therewith, a tubular liner within said intermediate sleeve, a portion of said liner being adapted to be disposed in and affixed firmly to the inner wall of the hollow portion of said lower housing of the writing implement, two parallel walls fixed within said liner and extending from one side of said liner to the other side thereof and encasing said screw shaft, whereby rotation of said upper section and said intermediate sleeve as a unit axially moves said screw shaft and said eraser supporting member, portions of said walls being spaced from the inner wall of said liner to provide a storage space for pencil leads, and a washer disposed between said upper section and said liner for closing the open end of said storage space.

2. For use with a writing implement having a lower housing provided with a hollow portion in the upper end thereof, an improved adjustable eraser comprising, an upper section adapted to be rotated with respect to said writing implement provided at one end with an internally threaded portion, an intermediate sleeve attached to said upper section for rotation therewith, a substantially oblong screw shaft disposed in the internally threaded portion of said upper section for axial movements therein, an eraser supporting member at one end of said oblong screw shaft for axial movement therewith, a liner within said intermediate sleeve and having a portion adapted to be disposed in and affixed firmly to the inner wall of the hollow portion of said lower housing of the writing implement, two substantially parallel walls fixed within said liner and extending from one side of said liner to the other side thereof and encasing said screw shaft, whereby rotation of said upper section and said intermediate sleeve as a unit axially moves said screw shaft and said eraser supporting member, portions of said walls being spaced from the inner wall of said liner to provide a storage space for pencil leads, and a closure disposed between said upper section and said liner for closing the open end of said storage space.

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