Aug. 22, 1933. H. H. LANG 1,923,153

MECHANICAL PENCIL

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Fig. 1

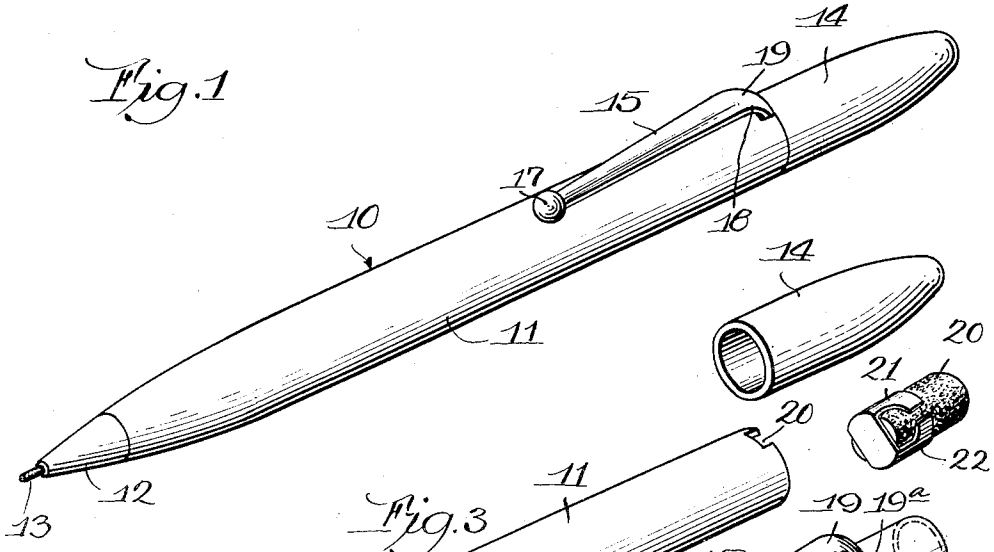
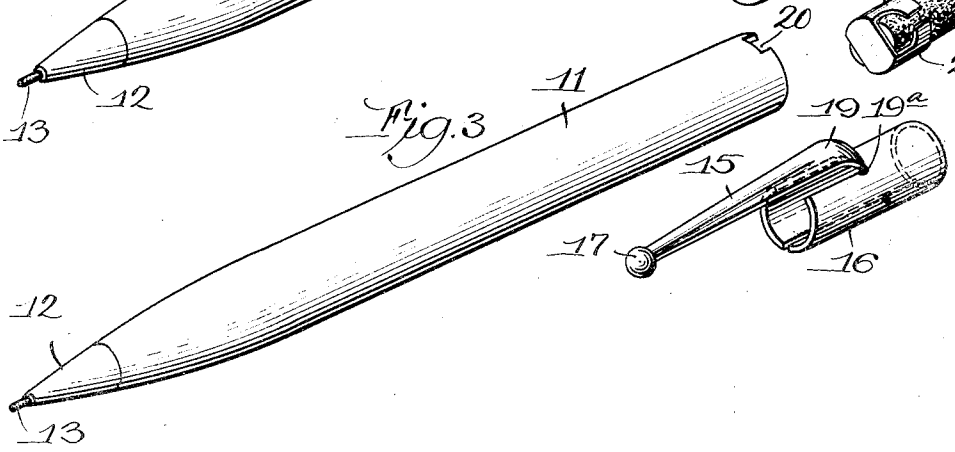


Fig. 3



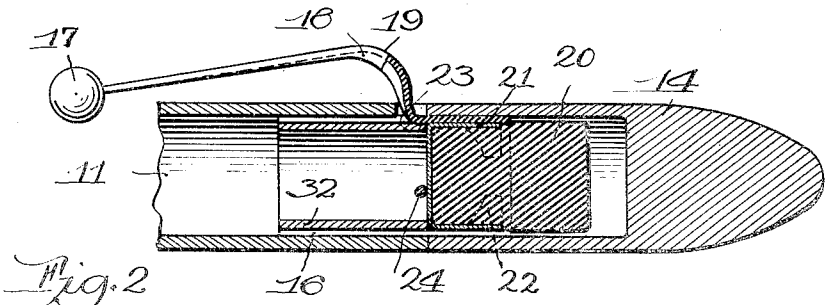


Fig. 2

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MECHANICAL PENCIL

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9 Claims. (Cl. 120—84)

This invention relates to improvements in mechanical pencils and consists of the matters hereinafter described and more particularly pointed out in the appended claims.

The object of the invention is to produce a mechanical pencil with a body or barrel to which is applied a novel and improved combination ferrule and clip at the top of the barrel for engagement with the pocket flap.

Another object of the invention is to produce a combination ferrule and clip of the kind which is of economical construction and which may be readily and easily applied to the body or barrel of the pencil in the process of assembly.

The advantages of the invention will appear more fully as I proceed with my specification.

In the drawing:—

Figure 1 is a perspective view of a mechanical pencil provided with my improvements.

Figure 2 is a view representing a partial longitudinal section through the pencil barrel at the top end thereof.

Figure 3 is a view representing in perspective the several parts of the pencil including the barrel, combination ferrule and clip, cap and eraser in disassembled relation.

Referring now to that embodiment of the invention illustrated in the drawing:

10 indicates as a whole a mechanical pencil provided with my improvements; 11 indicates the body or barrel containing any preferred or usual lead propeller mechanism; 12, the tip through which is propelled the lead 13; and 14 indicates a removable cap applied to the barrel to enclose the usual rubber or eraser placed at the top end of such pencils.

15 indicates a clip adapted to engage a pocket flap in the usual manner. Said clip in this case and as illustrated is made integral with a longitudinally split ferrule 16 which is constructed to be inserted into the top end of the barrel 11. The clip and ferrule are preferably stamped or cut from a single blank of metal. The clip part 15 is cut partially from the part of the blank which forms the ferrule, which to this end is cut a little more than half its length as shown. The clip is tapered towards its end where enough metal is left to form into a ball or rounded end 17. It is also upset transversely throughout its length as indicated at 18 in Figure 2 to present a transversely curved section for strength to resist bending. During its formation the clip is bent outwardly almost at a right angle from the body of the ferrule as indicated at 19, and is then bent backward toward the longitudinal central axis of the ferrule, so that when applied to the pencil barrel it will be inclined thereto in the desired manner for engagement with a pocket flap.

To strengthen the structure at the point where the clip is bent at right angles away from the body of the ferrule, the metal at the top of the slits formed in cutting the sides of the detent from the blank in the neighborhood of the ferrule is cut away on each side at the top ends of the slits forming the holes 19a at each side thereof.

The ferrule 16 is itself finally bent to form a cylinder of a diameter adapting it to closely and snugly fit within the tubular end of the barrel 11, so that when driven therein it will be sufficiently held there by friction. The barrel is provided with a notch 20 at its top adapted to receive and to be engaged by the outward bend 19 at the top of the clip and thus lock the ferrule against rotation in the barrel, as clearly shown in Figures 1 and 2.

The eraser 20 is shod at one end by means of a metal strap 21 bent about its end and partially about the lower half of its body to which it is secured by indents 22 in a familiar manner. Said shoe is formed to closely fit within the top end of the ferrule 16 which has the metal thereof upset as by an indent 23, where the clip is bent outwardly from the ferrule by one or more indents 24 on a level therewith, to arrest and form a stop against the inward movement of the shoe when inserting the eraser, and to act as a thrust bearing for the eraser 20 when the same is in use.

The cap 14 will enclose the eraser when applied to the projecting end of the ferrule 16, and will abut against the end of the barrel to present a smooth, continuous exterior of cap and barrel.

It has been found that the cap 14 may tend to bind on the projecting end of the ferrule to an extent such that when withdrawing the cap it will have such a grip on the ferrule that it will withdraw the ferrule from the barrel when withdrawing the cap. To obviate this I provide preferably a sleeve 32 which is driven into the bottom end of the ferrule and extends up to the point where the clip is bent away from the body of the ferrule. The upper end of this sleeve may be used as a stop for the eraser shoe and the detents 23 and 24 may be omitted if desired.

The slit in the ferrule not only provides for the necessary spring action of the body of the

ferrule when engaging it within the top end of the barrel, but it also in the part of the ferrule beyond the barrel accommodates any shrinkage that may take place in the cap. This cap when made of some materials is likely to have considerable shrinkage and that may always be allowed for by the width of the slit in the ferrule.

I claim as my invention:—

1. In a mechanical pencil, in combination with a barrel, said barrel having a notch at its top end, a combined clip and ferrule, said clip being bent outwardly from said ferrule near the middle of said ferrule and then downwardly at an angle to the central axis of said ferrule, said ferrule being adapted for insertion into said barrel, with the top part of said clip engaged in said notch.

2. In a mechanical pencil, in combination with a pencil barrel having a notch at its top end, a combined clip and ferrule engaged in the upper end of said barrel, said clip and ferrule being stamped from a sheet of metal and consisting of a split tube with the clip partially cut therefrom and depending therebelow, the clip being bent away from said ferrule intermediate its ends and then bent downwardly at an angle to the axis of said ferrule, and the part of said ferrule below said clip being inserted into said barrel with the top of said clip engaged in said notch.

3. In a mechanical pencil, in combination with a barrel provided with a notch at its upper end, a combined ferrule and clip engaged in said barrel with the top end of said clip located in said notch, part of said ferrule projecting beyond said barrel presenting a seat for an eraser, said ferrule being split to form a resilient seat for a cap.

4. In a mechanical pencil, in combination with a barrel provided with a notch at its upper end, a combined clip and ferrule stamped from a sheet of metal and consisting of a part bent to form a split tube which is the ferrule, and a part cut from the bottom of the ferrule to a point intermediate its ends, which part is bent outwardly at substantially right angles to said tube and then back at an inclined angle to said tube, the part of said tube below the top of said clip being engaged in said barrel with the clip locked in the notch in said barrel.

5. In a combined clip and ferrule, adapted for insertion in the end of a pencil barrel, the same being stamped from a single piece of metal and consisting of a part bent to form a split tube and a part extending longitudinally of said tube with its upper end cut therefrom, said clip being bent at substantially right angles to said tube and then inclined towards the longitudinal central axis of the said tube.

6. In a mechanical pencil, in combination with a barrel provided with a notch at its upper end, a combined ferrule and clip engaged in said barrel with the top end of said clip located in said notch, said ferrule being split longitudinally and projecting beyond said barrel to present a seat for an eraser, said ferrule being split to form a resilient seat for a cap.

7. In a mechanical pencil, in combination with a barrel provided with an opening therein, a clip engaged in said opening, a ferrule engaged in said barrel and projecting beyond said barrel presenting a seat for an eraser, said ferrule being split longitudinally, said ferrule being split to form a resilient seat for a cap.

8. In a mechanical pencil, in combination with a barrel provided with an opening, a clip engaged in said opening, a ferrule engaged in said barrel, said ferrule being split longitudinally and projecting beyond said barrel to prevent a seat for an eraser, said clip and ferrule being locked in said barrel against relative rotative movement.

9. In a mechanical pencil, in combination with a barrel, a ferrule engaged in said barrel, said ferrule being split longitudinally and projecting beyond said barrel to present a seat for an eraser and a detachable cap.

HERBERT H. LANG.