Aug. 18, 1942. D. P. JACOBS 2,293,343

MECHANICAL PENCIL

Filed Nov. 15, 1939

Fig. 1

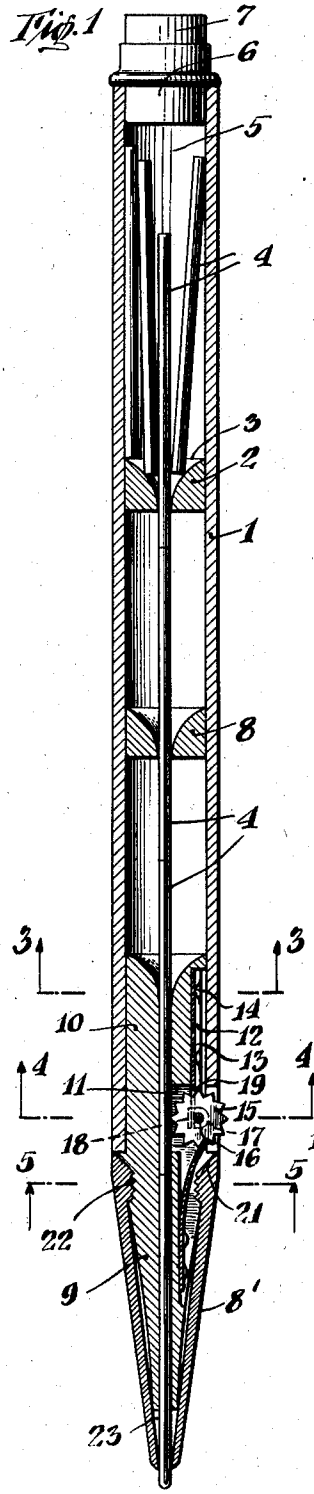


Fig. 2

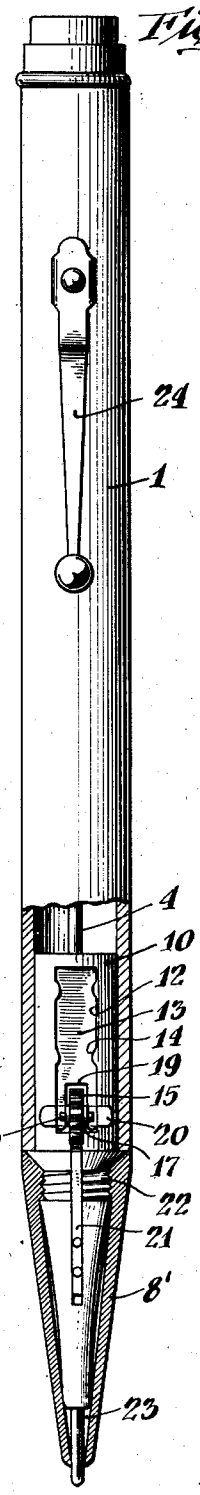


Fig. 3

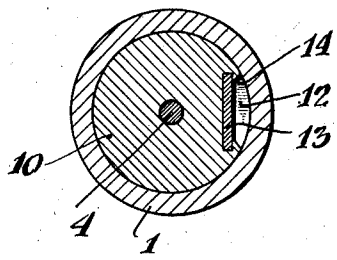


Fig. 4

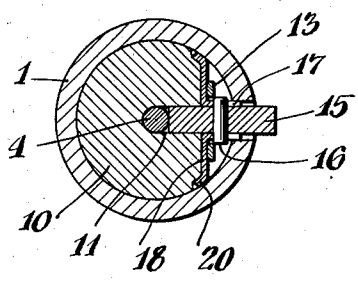
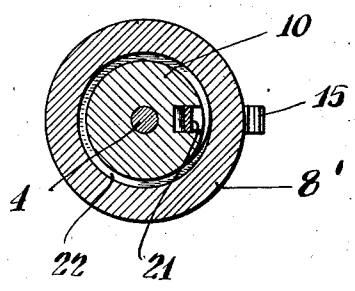


Fig. 5



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MECHANICAL PENCIL

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Application November 15, 1939, Serial No. 304,496

2 Claims. (Cl. 120—19)

This invention relates to mechanical pencils and more particularly to pencils wherein the lead thereof is advanced as desired by a manually operated feeding device.

One feature of this invention is to provide a pencil having a reservoir, to hold a plurality of leads, so arranged that one lead after the other can be fed through the pencil as the operating lead is consumed by writing.

Another feature is the system of guides in the pencil to insure the travel of the leads in a straight line through the longitudinal center of the pencil.

Another feature is the method of feeding the leads by a toothed wheel bearing against the lead to advance the same when rotated and parts locking the lead in position when advanced.

Other features will appear from the following specification wherein, referring to the drawing:

Fig. 1 is a section view of the pencil through the longitudinal axis.

Fig. 2 is a side view of the pencil partly in section.

Fig. 3 is a section through 3—3 Fig. 1.

Fig. 4 is a section through 4—4 Fig. 1.

Fig. 5 is a section through 5—5 Fig. 1.

The same numerals are used for similar parts throughout the different views.

The pencil is provided with an outer casing 1 which may be of tubular form as shown. Near one end of the casing is a guide 2, secured thereto and formed with a central opening 3 to allow leads 4 to pass through. This opening 3 is flared on the upper side of the guide 2 to facilitate the entering of the leads 4 therein. The space 5, in the upper part of the casing 1, and above the guide 2, is enclosed by a cap 6 removably fitted into the casing and constitutes a reservoir or receptacle for the holding of leads 4 ready to be advanced in the pencil as needed. The cap 6 may be provided with an erasing rubber 7 as shown. In approximately the center of the casing 1, a second guide 8 is secured thereto, of substantially the same shape as the guide 2 and to guide the leads 4.

At the end of the casing 1 opposite to the receptacle 5 is provided a device for guiding and advancing the leads 4 to a writing tip 8' of the pencil.

This device consists of a guide member 10 preferably made of metal and secured to the end of the casing 1. This member 10 is provided with an opening through the center to permit the leads 4 to pass therethrough. One side of the central opening and joining therewith is a rectangular opening 11 extending to the casing 1. Running into this opening 11 is a rectangular longitudinally elongated depression 12, into this depression is fitted a strip 13 of metal, secured therein by crimping over upon the strip places on the edges 14 of the depression. Rotatively pivoted at the end of the strip 13 is provided a star wheel 15 bearing against the lead 4 and mounted on a pivot 16 which is provided with a bearing 17 at either end thereof in the form of angle plates 18. The bearing portions of 17 of these angle plates 18 pass through an opening 19 Fig. 2 in the strip 13. The angle plates are provided with extensions 20 at their outer ends which rest in corresponding locating recesses in the guide members 10. The star wheel 15 bears against the lead 4 with sufficient pressure to advance it through the pencil when rotated. In order to prevent the lead 4 being pushed back into the pencil, from the pressure against it while writing, a spring 21, secured to the end 9 of the guide member 10, bears against the periphery of the star wheel 15 so that it can only rotate in the direction to advance the lead 4. At the outer end of the pencil, opposite to the cap 6, is a tip 8 which is threaded to the guide 10 at 22 the tip 8' having an opening 23 at its end through which the lead 4 passes.

The pencil may be provided with a clip 24 secured to the casing 1, if desired in the usual manner.

Having described my invention so that anyone in the art to which it pertains can make and use the same, what I claim as my invention and wish to secure by Letters Patent is:

1. A mechanical pencil, having a tubular external shell, a tubular guide for leads secured to one end thereof having a lateral recess open to the inner bore and to the outside of the pencil, a manually operable wheel in said recess having a toothed periphery to press the leads against said guide to advance the same, a resilient support for the wheel secured to said guide and a pawl also secured to said guide engaging the teeth of said wheel to limit its rotation to one direction to advance the leads and control the amount of lead fed by the wheel.

2. A mechanical pencil, having a tubular external shell, a tubular guide for leads secured to one end thereof having a lateral recess open to the inner bore and to the outside of the pencil, a manually operable wheel, in said recess, having a toothed periphery to press the leads against said guide and effective when rotated to advance the same, means inside of said shell to support the wheel in said recess, and means secured to said guide within the shell engaging the wheel to limit its rotation to one direction to advance the leads.

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