Aug. 7, 1923. 1,463,803

W. P. DE WITT

PENCIL WITH ADJUSTABLE LEAD

Filed June 15, 1922

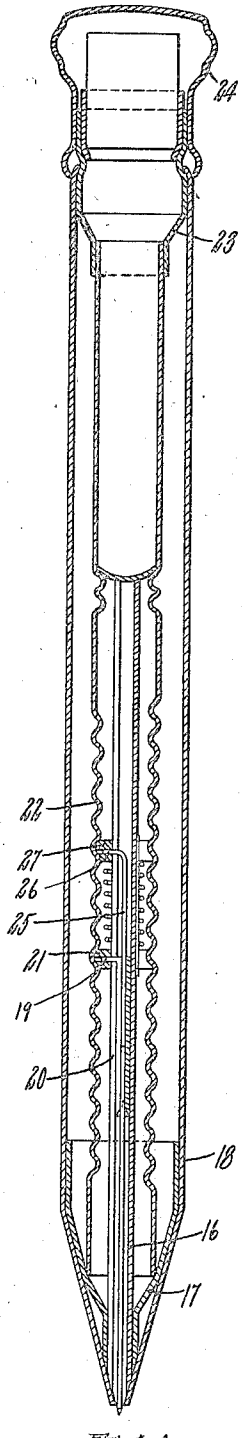

Fig. 1.

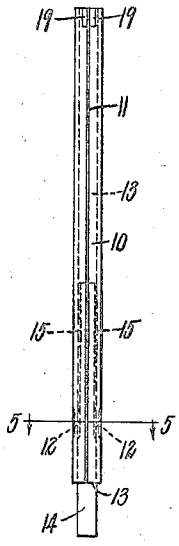

Fig. 2.

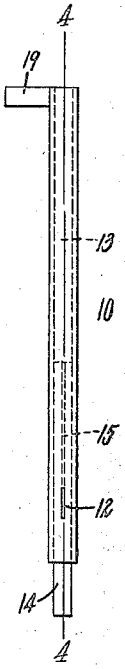

Fig. 3.

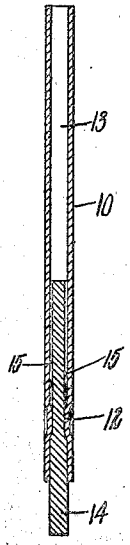

Fig. 4.

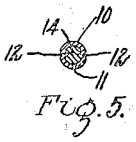

Fig. 5.

Fig. 6.

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UNITED STATES PATENT OFFICE.

WILLIAM P. DE WITT, OF SOMERVILLE, MASSACHUSETTS.

PENCIL WITH ADJUSTABLE LEAD.

Application filed June 15, 1922. Serial No. 568,469.

To all whom it may concern:

Be it known that I, WILLIAM P. DE WITT, a citizen of the United States, residing at Somerville, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Pencils with Adjustable Leads, of which the following is a specification.

This invention relates to a pencil of the magazine type which embodies in its construction a reciprocatory lead holder for pencils and especially to pencils of the class set forth in which the reciprocatory lead holder is adapted to receive and hold a lead of very small diameter.

The object of the invention is to provide a reciprocatory holder for the lead of a pencil in which the lead can be easily inserted and which will hold the lead, after being so inserted, firmly positioned so that it cannot drop out of the pencil casing and so that it cannot vibrate from side to side or rotate. These desirable results are obtained by providing within a pencil casing a tube preferably split longitudinally thereof and having one or more projections extending into the bore of the tube. The tube is made of resilient material so that when the lead is forced into the tube from the front end thereof the projection or projections will cut a longitudinal groove or longitudinal grooves in said lead and the holder being split and having projections extending into these grooves, will have a firm grip upon the lead so that the lead cannot fall out of the pencil and also so that it cannot be rotated in the holder, thus causing the pencil to have all the firmness and reliability of a pencil in which the lead is fixed as in the wooden lead pencils of commerce.

The invention consists in a reciprocatory lead holder for pencils and also in the combination of such a lead holder with a pencil casing, and further the combination of such a lead holder, with a pencil casing and other instrumentalities adapted to propel the lead, all as hereinafter fully described and set forth in the claims.

In the drawings and in the specification I have illustrated and described my invention as embodied in a preferred form of magazine pencil, said pencil and the mechanism therein being substantially the same as that disclosed in an application filed by me on April 19th, 1920 for "pencils", Serial Number 374,848, and while this is the preferred form of pencil to be used in combination with my improved lead holder, I do not desire to be understood as limiting this invention to the particular form of pencil hereinafter described and illustrated in the drawings, it being evident that the lead holder with a projection extending into the bore thereof and movable longitudinally of the pencil casing which forms the principal subject matter of this invention may be used in any pencil casing without departing from the spirit of my invention.

Referring to the drawings:

Figure 1 is an enlarged sectional elevation of a pencil with my improved lead holder incorporation therein.

Fig. 2 is a side elevation of the lead holder of my invention with a piece of lead positioned therein.

Fig. 3 is a front elevation of the same.

Fig. 4 is a section taken on the line 4—4 of Fig. 3.

Fig. 5 is a transverse section taken on line 5—5 of Fig. 2.

Fig. 6 is a side elevation of a pencil lead as it appears after it has been inserted in the holder.

Like numerals refer to like parts throughout the several views of the drawings.

In the drawings, 10 is the lead holder split longitudinally thereof at 11 and provided with a pair of oppositely disposed projections 12 which project into the bore 13 of the lead holder. The lead 14 is inserted in the front end of the bore of the lead holder 10 and pushed against the projections 12 which are preferably pointed and V-shaped in cross section as illustrated in Figure 5. When the lead is thus pushed against and beyond the projections 12, a pair of oppositely disposed grooves 15 will be formed therein, and as the lead holder is made of resilient material and is split at 11 the lead will be gripped by the lead holder and particularly by the projections 12 so that it cannot drop out of the pencil, so that it cannot move laterally in the holder and also so that it cannot rotate in the holder. The lead holder may be used in any form desired, but in Figure 1 I have illustrated the same as being slidably mounted in a fixed guide tube 16. The guide tube is fixedly positioned in an alignment tube 17 which, in turn, is fixedly positioned in an outer casing 18. The holder 10 is provided with ears 19 which project into a slot 20 provided in the guide tube 16 and into a collar

21 which has screw-threaded engagement with a propeller tube 22, the propeller tube being rotated by means of a tube 23 fixed to the rear end thereof and rotated by means of a head 24. By this mechanism it is evident that by rotating the head 24 the lead holder can be moved forwardly or rearwardly in the guide tube 16. After the lead holder has been advanced by the mechanism hereinbefore described to its extreme forward movement, the lead 14 can be ejected therefrom by a push rod 25 which is slidably mounted in the holder 10 and has a lateral projection 26 at its upper end which projects through the slot 20 in the guide 16 and into a collar 27 which has screw-threaded engagement with the propeller tube 22.

The general operation of the article hereinbefore described is as follows:—The lead 14 is pushed into the holder 10 and in so doing, is provided with grooves 15 on opposite sides thereof, as hereinbefore described. The lead holder is propelled forwardly and rearwardly by the mechanism hereinbefore described and the lead is ejected from the lead holder by the push rod 25 operated as hereinbefore described.

I claim:

1. A pencil having, in combination, a casing, a tubular lead holder in said casing split longitudinally thereof and adapted to receive a lead, a projection on said lead holder extending into the bore thereof and adapted to cut a longitudinal groove in said lead when it is inserted in said holder and means to move said holder longitudinally of said casing.

2. A pencil having, in combination, a casing, a stationary guide tube within said casing, a tubular lead holder adapted to receive a lead and slidable in said guide tube, a projection on said lead holder extending into the bore thereof and adapted to cut a longitudinal groove in said lead when it is inserted in said holder and means to move said lead holder longitudinally of said guide tube.

3. A pencil having, in combination, a casing, a stationary guide tube within said casing, a tubular lead holder split longitudinally thereof and adapted to receive a lead and slidable in said guide tube, a projection on said lead holder extending into the bore thereof and adapted to cut a longitudinal groove in said lead when it is inserted in said holder, and means to move said lead holder longitudinally of said guide tube.

4. A pencil having, in combination, a casing, a stationary guide tube within said casing, a tubular lead holder adapted to receive a lead and slidable longitudinally within said guide tube, a projection on said lead holder extending into the bore thereof and adapted to cut a longitudinal groove in said lead when it is inserted in said holder, means adapted to impart a longitudinal movement to said lead holder, a push rod slidable within said lead holder and means to impart a longitudinal movement to said push rod.

5. A pencil having, in combination, a casing, a tubular lead holder in said casing adapted to receive a lead, a projection on said lead holder extending into the bore thereof and adapted to cut a longitudinal groove in said lead when it is inserted in said holder, means to move said holder longitudinally of said casing and a push rod slidable longitudinally in said lead holder.

6. A pencil having, in combination, a casing, a tubular lead holder in said casing adapted to receive a lead, a projection on said lead holder extending into the bore thereof and adapted to cut a longitudinal groove in said lead when it is inserted in said holder, means to move said holder longitudinally of said casing, a push rod slidable longitudinally in said lead holder and means to impart a reciprocatory movement to said push rod whereby said lead may be ejected from said holder.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM P. DE WITT.

Witnesses:
FRANKLIN E. LOW,
KATHRYN M. JOYCE.