Feb. 19, 1924.

1,484,077

E. F. PIERCE

LEAD PENCIL

Filed Sept. 17, 1920

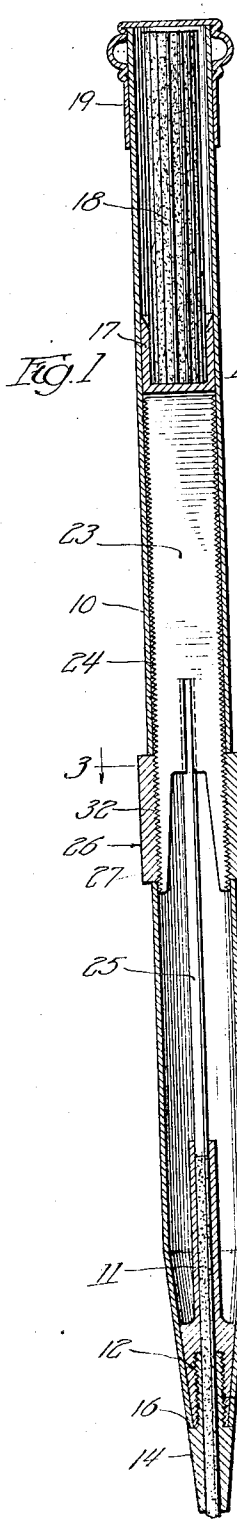

Fig. 1

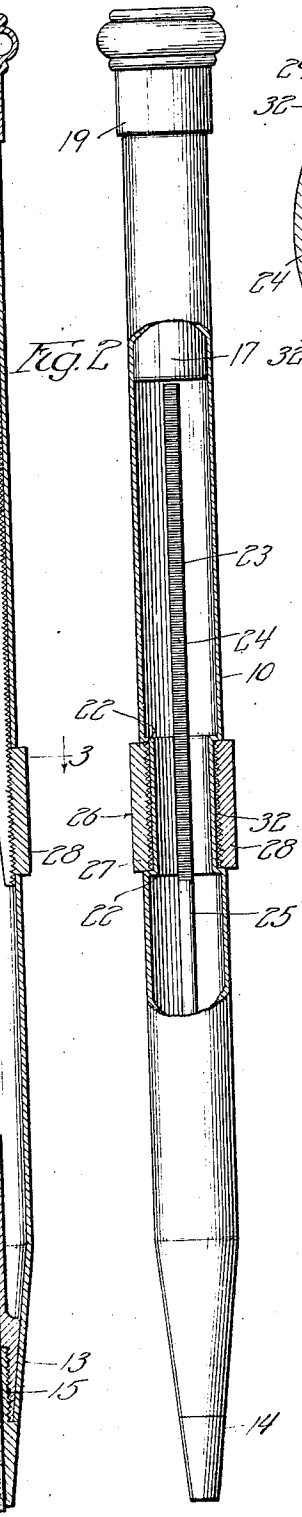

Fig. 2

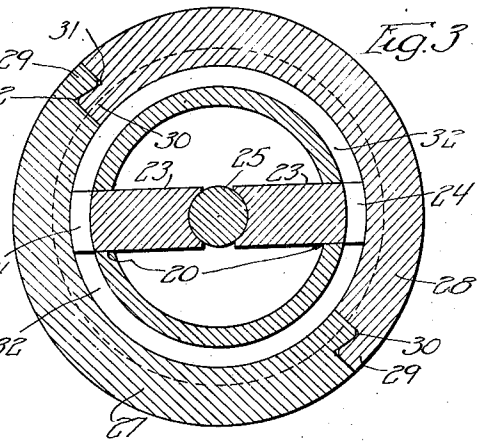

Fig. 3

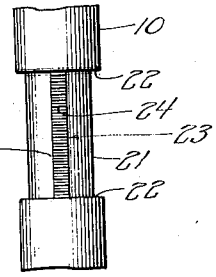

Fig. 4

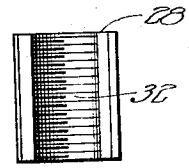

Fig. 5

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UNITED STATES PATENT OFFICE.

EARL F. PIERCE, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE WAHL COMPANY, OF WILMINGTON, DELAWARE, A CORPORATION OF DELAWARE.

LEAD PENCIL.

Application filed September 17, 1920. Serial No. 410,813.

To all whom it may concern:

Be it known that I, EARL F. PIERCE, a citizen of the United States, and resident of Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Lead Pencils, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to improvements in lead pencils and is particularly concerned with improvements in that type of pencil in which a barrel of more or less permanent material is provided with means at one end for receiving and guiding a pencil lead, other means being mounted in the barrel for feeding the lead through the receiving and guiding means whereby the end of the lead is exposed for use.

The objects of my invention are—

First: to provide a lead pencil of the character described which is simple in construction and economical to manufacture.

Second: to provide a pencil of the character described by means of which the lead can be easily and quickly extruded the desired degree from the end of the pencil and held in its adjusted position, and

Third: to provide a pencil having means intermediate its ends whereby the lead can be properly adjusted and held in its adjusted position.

Other objects will appear as this description progresses, reference being had to the accompanying drawings, in which—

Figure 1 is a central longitudinal section through a pencil embodying my invention.

Figure 2 is a side elevation partially in section in a plane at right angles to the section plane of Figure 1.

Figure 3 is an enlarged transverse section taken on a line corresponding to the line 3—3 of Figure 1.

Figure 4 is a side elevation of a portion of my improved pencil with certain parts removed, and

Figure 5 is an elevation of a portion of the screw-threaded sleeve forming a part of my invention.

Throughout the several views, similar reference characters will be used for referring to similar parts.

My pencil comprises a barrel 10 which is preferably formed of metal although it may be formed of other more or less permanent material. At one end the barrel may be provided with a suitable lead receiving and guiding tube 11, the outer end of which is tapered as shown at 12 to conform to the inner periphery of the tapered portion 13 of the barrel. A tip 14 has screwthreaded engagement with the outer end of the lead receiving and guiding tube 11 as shown at 15 and is provided with a shoulder 16 which bears against the end of the barrel and causes the lead receiving tube 11 and the tip, itself, to be tightly clamped to the end of the pencil when the tip is completely threaded into the outer end 12 of the tube 11. The tip 14, in effect, constitutes a continuation of the lead receiving and guiding tube 11.

If desired, a cup 17 may be soldered or otherwise secured in the opposite end of the barrel 10 so as to provide a magazine for receiving pencil leads 18. A cap 19 may be used for closing the end of the magazine. The parts thus far described form no part of my invention except as they co-act with the parts about to be described, and it will, therefore, be understood that so far as these parts are concerned they may be modified as desired or as is found to be convenient.

In making my improved pencil, two oppositely disposed longitudinally extending slots 20 are first formed in the walls of the barrel thereof at a point intermediate its ends and the walls of the barrel are then rolled or swaged inwardly to form an annular groove 21 corresponding in length to the length of the slots so that when this operation is completed, the slots will lie at the bottom of the groove and likewise extend through the shoulders or end walls 22 of the grooves. I then provide a feed bar 23 which is slidably mounted in the barrel and the edges of which project through the slot so that the sides of the slot form guides for the edges of the feed bar 23 thus holding the feed bar against rotation. The edges of the feed bar are screw-threaded as indicated at 24. One end of the rod 25 is secured to the feed bar 23 and the other end is slidably mounted in the slot receiving and guiding tube 11 and provides the means for extruding the lead from this member when the feed bar is urged outwardly by the means about to be described.

This means comprises a sleeve 26 which is preferably formed of two sections 27 and 28 having the interlocking tongues 29 and 30 which can be snapped together to form a continuous sleeve, the engaging edges 31 and 32 of the tongues preferably being rounded to facilitate this operation. When the two halves are snapped together around the bottom wall of the groove 21, they will be held against longitudinal displacement relative to each other by the end walls 22 of the groove. The inner sides of the two portions of the sleeves are screw-threaded as indicated at 32 to provide screw-threaded engagement with the correspondingly screw-threaded edges of the feed bar.

From the above description, it will be clear that all that is necessary to do to adjust the feed bar 23 to any desired position, is merely to rotate the sleeve 26. By thus rotating the sleeve 26 in one direction, the feed bar will be moved outwardly and when operated in the opposite direction, the feed bar will be moved inwardly.

While I have shown the outer surface of the sleeve 26 as projecting beyond the outer surface of the barrel, it will, of course, be clearly understood that it may be made flush with the outer surface of the barrel or even depressed there below as may be desired. The sleeve 26 not only serves to adjust the feed bar 23 but will rigidly hold it in its adjusted position.

While I have described the details of construction of the preferred embodiment of my improved pencil, it is to be clearly understood that my invention is not limited to these details, but is capable of other adaptations and modifications within the scope of the appended claims.

Having thus described my invention, what I claim is:—

1. A pencil comprising a barrel having its walls swaged inwardly intermediate the ends thereof to form an annular groove, the bottom of said groove being provided with a slot extending longitudinally of said barrel, means at one end of said barrel for receiving and guiding a lead, a feed bar slidably mounted in said barrel, one edge of said feed bar being screw-threaded and extending between the edges of said slot, an internally threaded sleeve rotatably mounted in said groove and having screw-threaded engagement with the threaded edge of said feed bar, said sleeve being formed with a plurality of sections having interlocking engagement with each other and held against longitudinal displacement relative to each other by the end walls of said groove, and means at one end of said feed bar for expelling a lead from said lead receiving and guiding means.

2. A pencil comprising a barrel having its walls swaged inwardly intermediate the ends thereof to form an annular groove, the bottom of said groove being provided with a slot extending longitudinally of said barrel, means at one end of said barrel for receiving and guiding a lead, a feed bar slidably mounted in said barrel, one edge of said feed bar being screw-threaded and extending between the edges of said slot, an internally threaded sleeve rotatably mounted in said groove and having screw-threaded engagement with the threaded edge of said feed bar, said sleeve being formed with a plurality of sections having interlocking engagement with each other, and means at one end of said feed bar for expelling a lead from said lead receiving and guiding means.

3. A pencil comprising a tubular barrel, the wall of which is reduced in diameter for a distance intermediate its end to form an annular groove, a slot extending longitudinally of said barrel in the bottom and ends of said groove, a feed bar slidably mounted in said barrel and lying entirely therewithin except at said slot, one edge of said feed bar being screw threaded and extending between the edges of said slot, an internally threaded sleeve journaled in said groove and having its screw threads co-operating with said threaded edge to reciprocate said feed bar, a lead guiding and receiving means rigidly secured in one end of said barrel, and means on said bar for expelling a lead from said guiding means.

4. A pencil comprising a barrel having its walls depressed to a reduced diameter intermediate its ends to form an annular groove, a slot in the bottom and ends of said groove and extending longitudinally of said barrel, a feed bar reciprocable within said barrel, one edge of said bar being threaded, said bar lying entirely within said barrel except at said reduced portion, where said edge projects through said wall, said threaded edge being longer than said slot, a ring rotatably held in said groove and having internal screw threads which engage said feed bar to reciprocate the latter within said barrel, a lead guiding means in one end of said barrel, and means at one end of said bar for expelling a lead from said lead guiding means.

In witness whereof, I hereunto subscribe my name this 14 day of September, 1920.

EARL F. PIERCE.

Witnesses:
EDNA V. GUSTAFSON,
EMILE BOURGEOIS.