July 15, 1924. 1,501,121

C. R. KEERAN

PENCIL

Filed Aug. 3, 1921

Fig. 1.

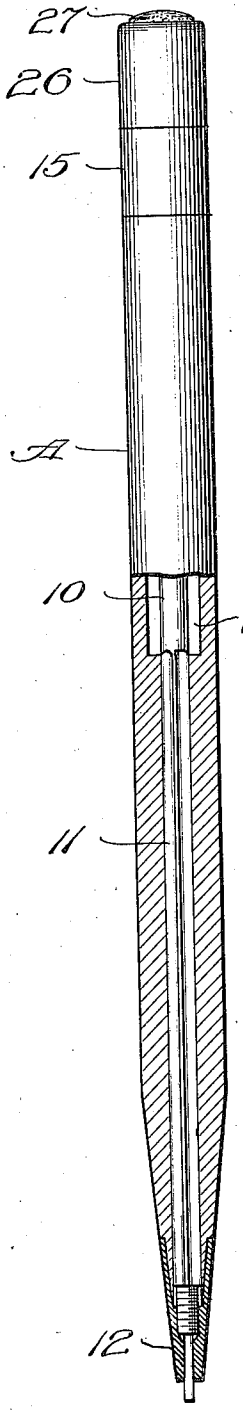


Fig. 3.

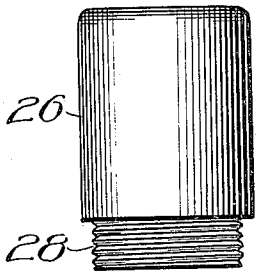


Fig. 4.

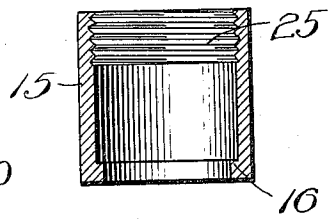


Fig. 5.

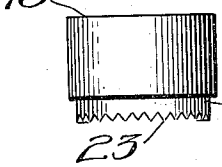


Fig. 6

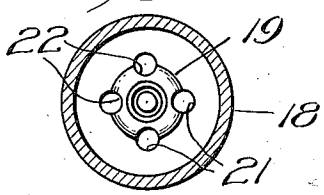
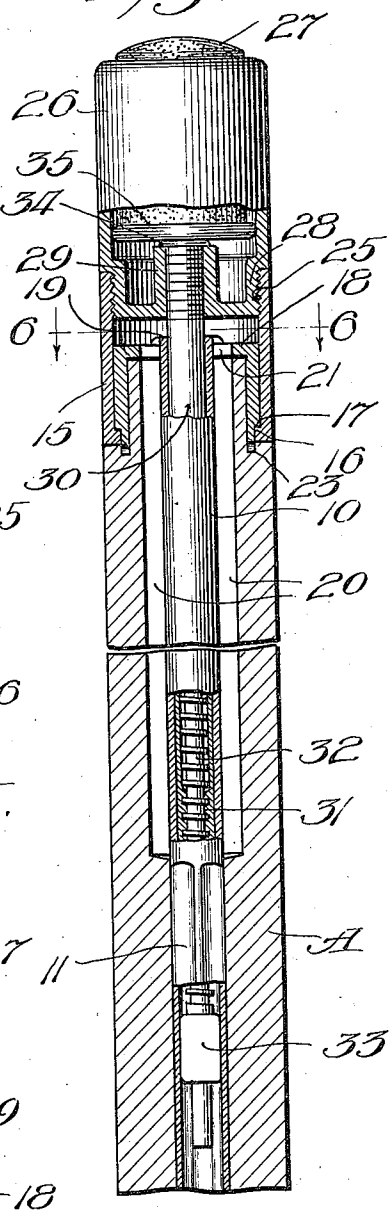


Fig. 2.



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Attys

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UNITED STATES PATENT OFFICE.

CHARLES R. KEERAN, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO AUTOPOINT MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

PENCIL.

Application filed August 3, 1921. Serial No. 489,481.

To all whom it may concern:

Be it known that I, CHARLES R. KEERAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Pencils, of which the following is a specification.

This invention relates to a pencil equipped with propelling mechanism interiorly of its body, and operable by means exteriorly thereof, for advancing into operative position a lead at one end and an eraser at the other. The general construction of the present pencil is similar to the ones disclosed in my patents granted March 22, 1921, Nos. 1,372,296 and 1,372,354.

An exemplification of this invention is shown in the drawing in the manner following:

Figure 1 is a side elevation of the pencil with its body partly broken away to exhibit the lower portion of the tube which is arranged axially therewithin;

Fig. 2 is an enlarged detail in longitudinal section, exhibiting the parts in the upper end of the pencil, the propelling plunger being shown as retracted close to its limit;

Fig. 3 is a side elevation of the eraser sleeve which forms the pencil head;

Fig. 4 is a longitudinal section through the collar to which the pencil head attaches;

Fig. 5 is a side elevation of the cap with which the collar is rotatably connected; and

Fig. 6 is a transverse section through the pencil taken on line 6—6 of Fig. 2.

In the use that is herein made of the terms "upper" and "lower," it should be understood that I am referring to the pencil as it is pointed in use—that is, with the eraser end up and the writing end down.

The body A of my pencil may be made of metal, wood, fibre, or any suitable composition. As shown in the drawings, the body is formed of wood and is provided with an axial bore through which extends a tube 10 that is fluted throughout its lower region 11. Secured to the lower end of the tube is a tip 12 which provides a ferrule for the body.

At its upper end the body is preferably recessed on its outer side to receive a collar 15 that is internally shouldered as at 16. This collar is rotatably secured to the pencil preferably by providing on the body a co-operating shoulder 17 overlying the collar shoulder. In the case of a pencil whose body is formed of some material other than metal it may be found convenient to provide such a co-operating shoulder upon the cylindrical walls of a cap 18 in some such manner as is shown in Fig. 2, the cap being secured to the upper end of the pencil through the instrumentality of the axial tube 10 whose extremity 19 is spun out to overlie the cap (see Fig. 6). Radial slots 20 may be formed in the body of such a pencil adjacent the tube 10, so as to provide compartments for reserve leads. Each of these slots is open at the upper end of the body over which the cap is placed, and to afford access to these slots I provide in the cap openings 21 which register with the slots, as best shown in Figs. 2 and 6. Suitable notches 22 are then formed in this spun over end 19 of the tube to register with the openings 21 so as not to interfere with access to the magazine. By preference the lower edges of the cap walls are toothed as at 23 (see Fig. 5), so as to engage non-rotatably with the body. It is to be understood that with a pencil of the kind illustrated, the cap serves the double purpose of a ferrule for the body and of a medium which carries means with which the collar may rotatably connect.

The collar which extends upwardly beyond the proximate end of the pencil body is internally threaded as at 25 to connect with the pencil head 26 which may be in the form of a sleeve adapted to retain an eraser 27. By preference the walls of the sleeve adjacent its lower end are inset and threaded as at 28 to connect with the threads of the collar, the external periphery of the sleeve remaining flush with the collar.

The sleeve if further formed adjacent its lower end with a hub 29 that may be interiorly threaded to connect with the upper end of a tube 30 which is rotatably fitted into the tube 10, terminating therein short of the point where its flutings commence. Near its lower end the tube 30 is internally threaded as at 31 to co-operate with threads that are formed on the body of a plunger 32 which is provided near its lower extremity with a fin 33 adapted to lie between the flutings of the tube 10 and thereby be held against rotation. The tube 30 which is

screw-threaded at its upper end to the hub of the pencil head is permanently connected therewith by having its extremity 34 spun over, as shown in Fig. 2. Rearwardly of the eraser 27 is arranged a plate 35 that may slide lengthwise within the pencil head whenever impelled to do so through retraction of the plunger.

In use, the operation of the pencil will be somewhat as follows: A lead which is first inserted in the tube 10 is propelled lengthwise thereof to emerge through the tip 12. Advancement of the plunger 32 is effected through rotation of the tube 30, the plunger itself being held against rotation by engagement of the fin 33 within the fluted portion 11 of the tube 10. The pencil head which is the medium for rotating the tube 30 will cause the collar 15 to also turn during these movements. For purposes of replenishing the lead supply, or otherwise, the pencil head may be removed by holding the collar stationary while the eraser sleeve is reversed in rotation. When the head is unscrewed in this manner, access is afforded to the reserve lead compartments, and also the tube 10 is opened up for the reception of a new lead in case this is desired. The parts may be assembled by a reversal of the operations just described.

The invention which is herein set forth is advantageous in that it reduces the number of parts which are required in the construction of a pencil of this type. The assembly of its various parts may be more expeditiously accomplished and also its manufacturing costs may be greatly reduced. Manifestly the exact form of the parts herein described may be changed without departing from the spirit of this invention which is to be construed in accordance with the claim following.

I claim:

A pencil having a body the upper end of which is externally recessed, a cap overlying said body end and formed with cylindrical walls which are disposed in the recess, a collar surrounding the cap walls also disposed within the recess so as to lie flush with the body, an inseparable slip connection between the collar and cap, screw threads formed on the collar, a head having screw threads adapted to connect with the collar, and means extending from the head into the interior of the pencil body for actuating propelling mechanism therewithin, substantially as described.

CHARLES R. KEERAN.

Witness:
EPHRAIM MANNING.