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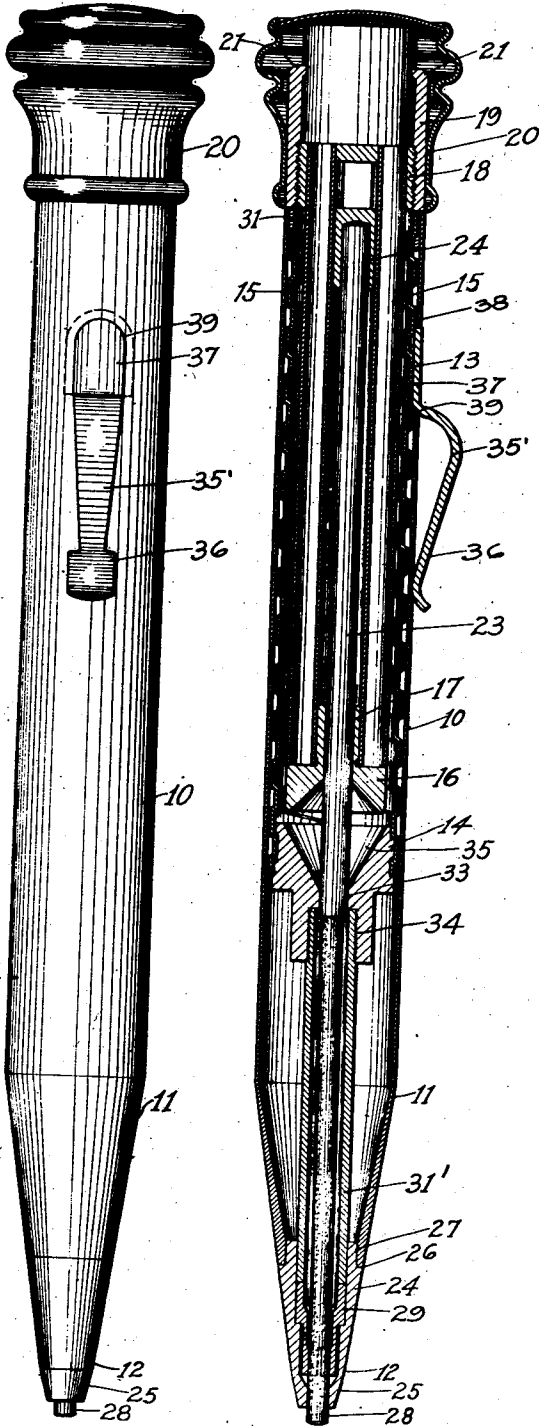
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MECHANICAL PENCIL

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Fig. 1

Fig. 2



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## MECHANICAL PENCIL.

Application filed April 28, 1922. Serial No. 557,198.

My invention relates to mechanical pencils.

The object of the present invention is to provide a device of the class described which will be simple of construction and operation and contain no involved or intricate parts which would likely break in ordinary usage.

The invention comprehends the relation of a feed mechanism to the pencil body and to details of construction hereinafter specifically pointed out and described.

The invention consists in the combinations and arrangements of parts hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings forming a part of this specification.

Referring to the drawings:

Fig. 1 is a side elevation of my improved pencil, and

Fig. 2 is a longitudinal sectional view of Fig. 1.

In the drawings, the numeral 10 indicates a barrel being tapered at 11 to form the tip 12 through which a lead is adapted to be propelled. In the construction illustrated an inner sleeve or tube 13 is provided which extends from the rear end of the barrel 10 to the union member 14, said union member being fashioned with a central longitudinal bore 33 having an expanded threaded portion 34 at its forward end for union with the threaded portion of the lead guide, also said union member is conically formed at its rear end as at 35 for the purpose of centering the lead with respect to a lead propeller hereinafter mentioned. It will be seen that the threads of the sleeve or tube 13 are rolled thereon the entire length and the union member 14 is so fashioned as to receive the threaded sleeve 13.

Referring specially to the operating mechanism for propelling a lead through the tip 12, magazines 15 for extra leads are provided and these magazines are utilized as an actuating member for moving the follower or feed wire, hereinafter to be described, through the lead guide. The magazines are positioned opposite each other, the forward end being fixedly attached to the magazine head 16, said magazine head 16 acting as a plug to prevent the extra leads from falling out of the magazines, it being also fashioned to form a neck 17 which acts as a guide for the lead propeller. The

rear ends of the magazines are encircled by a threaded collar 18 which is fixedly attached thereto and acts to hold them in position, the threads of said collar being adapted to receive the threads of the sleeve 19 which frictionally engages the cap 20. At the open or free end of the sleeve 19 are inverted flanges 21 which form grips for a sleeve.

The collar 31 located at the rear end of the threaded sleeve or tube 13, the outer circumference of which is dimensioned to conform with the inner face of the barrel 10, is permanently attached by soldering, or any other desired manner, to the inner face or wall of the barrel or casing 10, and the sleeve 13 may be fixed with relation to the barrel 10 either by being fixedly connected to the collar 31, or by having frictional engagement with the interior of the barrel as desired.

The mechanism constituting the follower which forces the lead out from the end of the pencil through the tip 12, consists of a member 23 in the nature of a stiff wire which member terminates at its rear end in an enlarged head 24 which constitutes a cross head. This cross head is formed exteriorly with threaded surfaces which are adapted to engage the threads in the sleeve or tube 13.

It is obvious, as the cross head is rotated, by turning the cap 20 in a clockwise direction, which in turn rotates the magazine, the cross head will move downward and force the follower or feed rod forward with the result that the lead is fed out through the tip of the pencil.

It is thought that the above brief description as to the feeding mechanism for advancing the lead will suffice as no claims are made specifically to this construction except in conjunction with associated parts herein described; the same is more fully and completely described in Patent No. 1,130,741 granted to Charles R. Keeran under date of March 9, 1915.

The tip 12 is exteriorly fashioned to provide a general inclination as indicated at 24 that is in conformity with the general inclination of the tapered portion 11 of the barrel 10. 25 indicates the manner of fashioning the extreme end of the tip by an inward deflection from the general line thereof indicated at 24. 26 indicates a rectilinear shoulder off-

set at the rear end of the tip, provided for abutment entry into the end of the tapered portion 11 of the barrel 10 and for snug seating within the interiorly beveled portion 27 thereof.

28 indicates a lead passing through the centrally disposed bore within the tip. 29 refers generally to a tensioning member adapted to be fitted to the inner opening of the tip. The tip, per se, illustrated is merely shown in the general outline and no special reference will be made thereto hereinafter as it is not included in the improvement herein to which the claims are directed; a more complete description can be found in applicant's pending application dated October 27, 1921, Serial No. 510,813.

31' indicates a lead guide permanently affixed to the tip 12, said lead guide being exteriorly threaded at its upper end to engage the threads 34 in the union member 14.

A clip 35', consisting of a prong 36 and a base or supporting portion 37 is provided. The base 37 has a flange 38 swedged thereon, and said flange is adapted to contact with the inside of the tube 10. The thick portion of the base 37 is adapted to fit into a hole 39 which is punched in the barrel 10, and the flange 38 prevents the withdrawing of the clip 35 from the barrel 10.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In a mechanical pencil a barrel, a threaded lead propeller, a sleeve having threads cooperable with said propeller, means on said sleeve to limit its advance

toward the tip of the barrel, a tip adapted to seat in the forward end of the barrel, a union member adapted to thread onto the forward end of said sleeve; a lead guide fixed to said tip and adapted to be removably connected with said member to draw said tip and sleeve toward each other to seat them firmly in said pencil.

2. In a writing instrument a barrel tapered at one end, an elongated threaded sleeve fixed in said barrel, a union member having screw threaded engagement with the inner end of said sleeve, an internally threaded extension on said union member, a tip having an external taper similar to and continuing the taper of the end of the barrel, and a lead guide fixed at one end to the tip and at its other end having threaded engagement with the internally threaded extension of the union member.

3. In a writing instrument a barrel tapered at one end, an elongated threaded sleeve fixed in said barrel, a union member extending into the inner end of said sleeve and fixed thereto, a tip adapted to seat in the tip end of said barrel, and a lead guide fixed to the tip at one end and detachably connected to the union member at the other.

4. In a writing instrument a barrel tapered at one end, an elongated threaded sleeve in said barrel, a tip, a lead guide fixed at one end to said tip, a union member detachably and removably connected to said sleeve, one end of said lead guide being detachably connected to said union member.

5. In a mechanical writing instrument a barrel, an elongated thin metal sleeve fixed in said barrel, said sleeve having threads pressed therein, a union member having external threads in threaded engagement with the inner end of said sleeve, a tip, and a lead guide fixed at one end to said tip and detachably connected at its other end with said union member.

In witness whereof, I have hereunto subscribed my name.

JOHN C. WAHL.