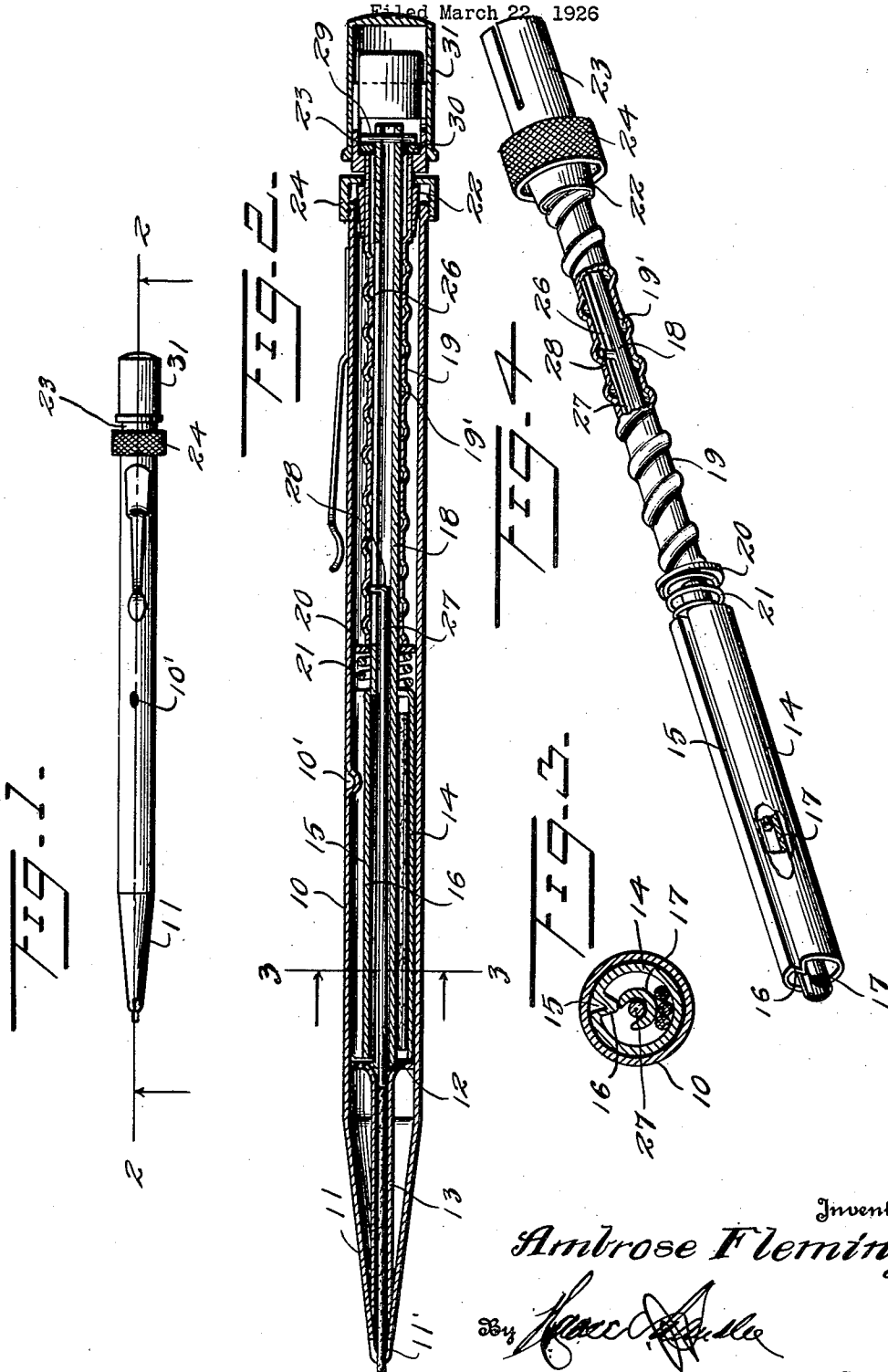


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A. FLEMING
MAGAZINE PENCIL

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MAGAZINE PENCIL.

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This invention relates to lead pencils, and particularly to that type in which the leads are contained within a casing and are propelled, or fed, when required, through a suitable guide and through a pointed end or nozzle, in such manner that the outer end of the lead shall project only a short distance beyond the tip of the nozzle so that while sufficiently exposed, for writing purposes, it is not liable to easy breakage.

The principal object of the invention is to provide a lead supporting and feeding unit, which is arranged to be slipped into the shell of the pencil, whereby simplicity, as well as cheapness in the cost of manufacture, will result.

Another object of the invention is to provide a pencil of this character which has a magazine for spare leads, such magazine being associated with means whereby fresh leads may be brought into position for projection without the necessity of opening the pencil case, or disconnecting any part or parts thereof.

Another object is to provide a device of this character wherein the entire pencil is adapted to be rotated or manipulated, to dispose a fresh lead into position for projection, thus obviating the necessity of independent movement of any of the parts of the pencil.

Other objects and advantages will be apparent from the following description when taken in connection with the accompanying drawing.

In the drawing:

Figure 1 is a plan view of the pencil.

Figure 2 is an enlarged longitudinal sectional view on the line 2—2 of Figure 1.

Figure 3 is an enlarged transverse sectional view on the line 3—3 of Figure 1.

Figure 4 is a perspective view of the internal unit removed from the shell, and partly broken away to show the projector and operating means therefor.

Referring particularly to the accompanying drawing, 10 represents a tubular shell having one end tapered, as at 11, to form a nozzle, and having the opening 11' in the tip thereof. Disposed transversely within the shell, inwardly of the tapered end, is a centrally apertured wall 12, and secured at one end in the opening of the wall is a tube 13, the other end thereof being secured within the opening 11'. The other end of the shell is externally threaded, as shown in the drawing.

Disposed within the shell, and fitting snugly therein, is the lead manipulating unit of the pencil which includes a cylindrical magazine 14, and formed longitudinally in the outer face of said magazine is a groove 15, which results in an inner longitudinal rib 16. Inwardly extending bosses, or projections 10', formed in the shell 10, enter the groove 15, for the purpose of preventing rotation of the magazine therein, and also as a guide in placing a fresh lead in position for projection, as will be explained later herein. Disposed longitudinally and centrally within the magazine 14 is a lead receiving channeled member 17, the open side of the channel of which is slightly offset from said rib 16, whereby the rib is in position to cause leads, which are contained in the magazine 14, to roll singly, into said channel. The outer end of the channeled member 17 projects a short distance beyond the corresponding end of the magazine, and is tapered so as to seat within the flared end of the tube 13, for the purpose of properly supporting and centering this end of the unit, and for aligning it with the discharge opening of the nozzle. The channeled member 17 is also extended rearwardly beyond the other end of the magazine 14, as shown at 18, and is properly secured within the adjacent end of the magazine. This extension is of such length that when the unit is properly disposed within the shell, said extension will project a distance beyond the externally threaded end of the shell. Surrounding the extension 18, and spaced a short distance from the adjacent end of the magazine 14, is a sleeve 19, and encircling the extension, between the sleeve and the magazine, is a coil spring 21, which bears against the magazine, and a washer 20, at its opposite ends. The other end of the sleeve 19 is provided with an external flange 22, and secured on the sleeve, in spaced relation to the flange, is a tubular eraser holder 23. Rotatably supported on the sleeve 19, between the member 23 and the flange 22, is an internally threaded cap 24, which engages on the threaded end of the shell, to hold the unit in proper position within the shell. The

sleeve 19 is internally threaded, by pressing a spiral rib and groove therein, such groove, shown at 19', being located in the inner face of the sleeve. The extension 18 is formed with a longitudinal groove 26 in which is disposed the lead projecting plunger 27, said plunger having outer end turned angularly, as at 28, to bear against the walls of the groove, and whereby the plunger is held from rotation. The terminal of the portion 28 plays in the spiral groove 19', so that upon rotating the sleeve 19, the plunger will be moved longitudinally in the groove or channel of the member 17, for the purpose of engaging and projecting a lead through the tapered end of the shell. The outer end of the extension 18, beyond the adjacent end of the sleeve 19, is provided with a transverse pin 29, which bears against a washer 30 seated on the adjacent end of the sleeve. The spring 21 normally exerts force to move the members 17 and 19 longitudinally with respect to each other for the purpose of frictionally holding the sleeve against accidental rotation. A removable cap 31 is engaged in covering relation to the eraser holder 23, being frictionally held thereon and adapted to be grasped to turn the sleeve 19.

In the operation of the device, when a lead has been practically used up, the operator rotates the sleeve 19 in a retrograde direction to withdraw the plunger 27 rearwardly out of the channel of the member 17. The operator, after so positioning the pencil that the bosses 10' are uppermost, rotates the pencil in a clock-wise direction until the bosses are again uppermost. This rotation of the pencil causes the leads to roll around in the magazine so that the foremost of said leads will be stopped by the ribs 16, and guided into the channel of the member 17. The cap is then grasped and the sleeve 19 rotated until the lead is projected from the nozzle to the desired distance for writing.

Attention is particularly called to the fact that the entire lead holding, guiding, and projecting mechanism forms a unit which is readily inserted or removed by simply disengaging or engaging the threaded cap.

What is claimed is:

1. A pencil comprising a shell having a discharge end, and a lead supporting and feeding unit removably disposed in the shell and including a cylindrical magazine, a channeled member disposed within the magazine in position to receive leads singly from the magazine, the magazine having an external groove, and means in the shell for engagement in the groove to prevent rotation of the magazine.

2. A pencil including a shell having a discharge end and a unit removably disposed in the shell, said unit including a cylindrical magazine, a channeled member ex-

tending centrally within the magazine, means on the magazine for guiding leads singly from the magazine into the channeled member, and means on the shell cooperating with the magazine guiding means for maintaining the magazine against rotation within the shell.

3. A pencil including a shell having a discharge end, and a unit removably disposed within the shell and comprising a cylindrical magazine having an external longitudinal groove resulting in an internal lead guiding rib, a channeled member within the magazine in position to receive leads singly guided from the magazine by said rib, said channeled member having an extension, and a lead projecting means in said extension.

4. A pencil including a shell having a discharge opening, and a unit removably disposed in the shell, said unit comprising a cylindrical magazine having rotation preventing cooperation with the shell, a central longitudinal lead receiving channeled member in the magazine, said channeled member having an extension, a projector in the extension, an internally threaded sleeve on the extension and engaged with the projector, and means at the other end of the shell for removably holding the unit.

5. A pencil including a shell having a discharge opening, a channeled lead receiving member in alinement with the discharge opening, a cylindrical magazine surrounding the lead receiving member and connected thereto, a flange rigidly connected to the inner wall of the magazine for guiding a lead into the channel of the lead receiving member, and means for discharging the lead from the lead receiving member through the discharge end of the pencil.

6. A pencil including a shell having a discharge opening, a lead receiving member in alinement with the discharge opening, a magazine positioned upon and surrounding the lead receiving member, a projector movable longitudinally in the lead receiving member, means for moving the projector, and a tensioning means bearing upon the magazine and upon the means for moving the projector.

7. A pencil including a shell having a discharge opening, a lead receiving member in alinement with the discharge opening, a magazine positioned upon and surrounding the lead receiving member, a projector movable longitudinally in the lead receiving member, means for moving the projector, and a coil spring surrounding the lead receiving member between the magazine and the means for moving the projector.

8. A lead storing, feeding, and projecting unit for pencils including a magazine, a lead receiver, within the magazine in position to receive single leads therefrom, a projector,

means for moving the projector, and means within the magazine for guiding a single lead into the receiver upon partial rotation of the pencil.

5 9. A lead storing, feeding, and projecting unit for pencils including a magazine, a lead receiver disposed centrally within and spaced from the wall of the magazine a distance slightly greater than the diameter of a lead, 10 a projector movable longitudinally within said receivers, and means for moving the projector.

10. A lead storing, feeding, and projecting unit for pencils including a lead receiving 15 member, a magazine, a projector movable longitudinally within said member, means for moving the projector, said means being spaced from the magazine, and resilient means for holding the projector moving 20 means in spaced relation to the magazine.

11. A lead storing, feeding, and projecting unit for pencils including a lead receiver, a magazine enclosing said receiver, a rib formed upon the inner wall of the magazine and projecting into proximity to said 25 receiver for guiding a lead into the latter, and means for projecting a lead from the receiver.

12. A pencil structure comprising a casing, a lead directing member that is disposed 30 longitudinally within the casing, a magazine mounted on the front end portion of the lead directing member, and lead ejecting mechanism carried by the rear end portion of the 35 lead directing member, said member with the magazine and ejecting mechanism being re-

movable and replaceable through the rear end of the casing.

13. A pencil structure comprising a casing, a slotted member disposed longitudinally in the casing and removable from one end thereof, a lead magazine mounted on the member and surrounding a slotted portion thereof, a lead ejector located longitudinally in the member and having an offset portion projecting from the slot thereof, 45 a screw rotatably surrounding the rear portion of the member and engaging the offset portion of the ejector, said member with the magazine, ejector, and screw thereon in assembled relation being removable from and 50 replaceable in the casing.

14. A pencil structure comprising a casing, a slotted member disposed longitudinally in the casing and removable from one end thereof, a lead magazine mounted on the member and surrounding a slotted portion thereof, a lead ejector located longitudinally in the member and having an offset portion projecting from the slot thereof, 55 a screw rotatably surrounding the rear portion of the member and engaging the offset portion of the ejector, said member with the magazine, ejector, and screw thereon in assembled relation being removable from and 60 replaceable in the casing, and means on the screw and detachably engaging the rear end of the casing for holding the assemblage in said casing.

In testimony whereof, I affix my signature.

AMBROSE FLEMING.