

March 18, 1952

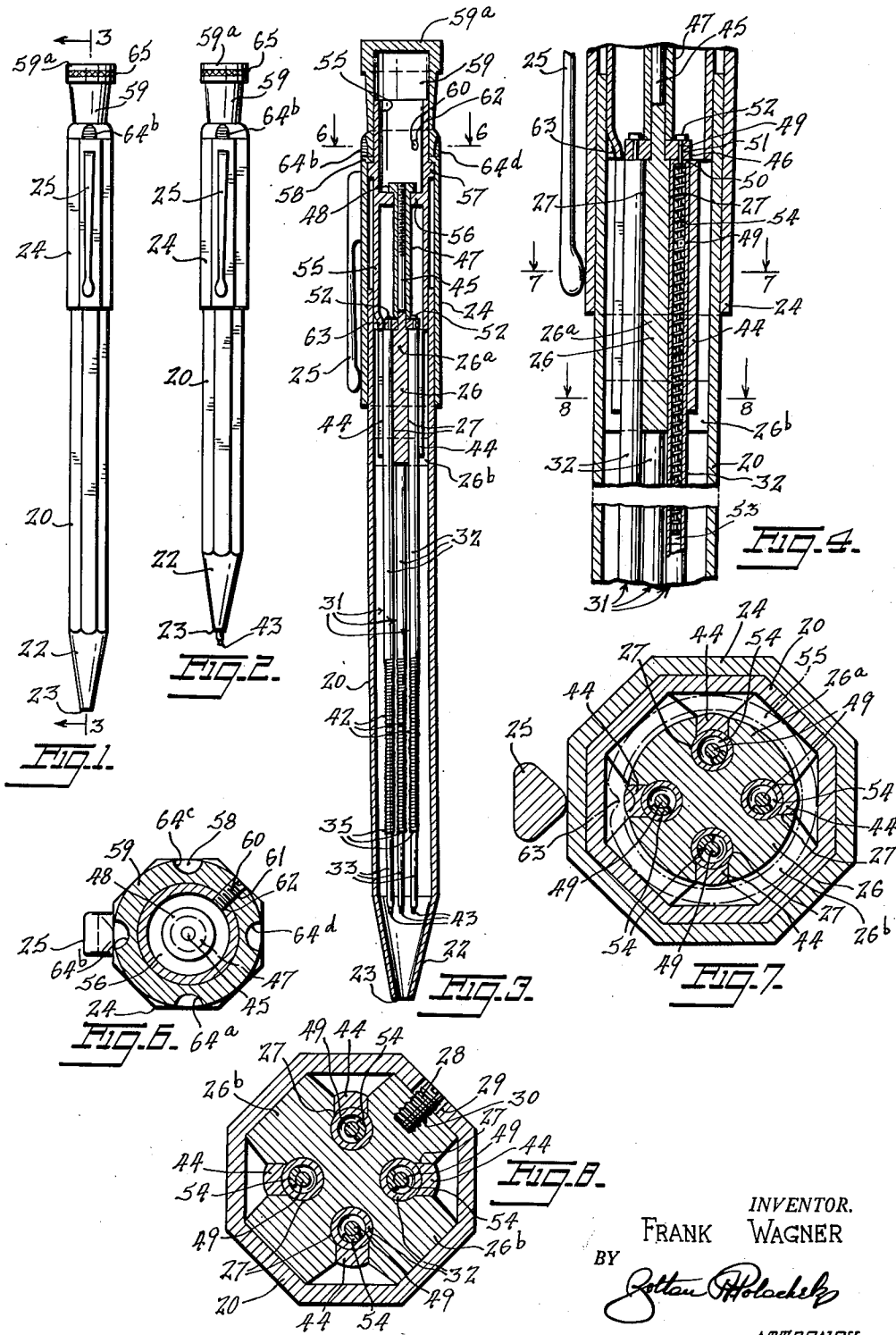
F. WAGNER

2,589,905

FOUR-COLOR MAGAZINE PENCIL

Filed March 28, 1951

2 SHEETS—SHEET 1



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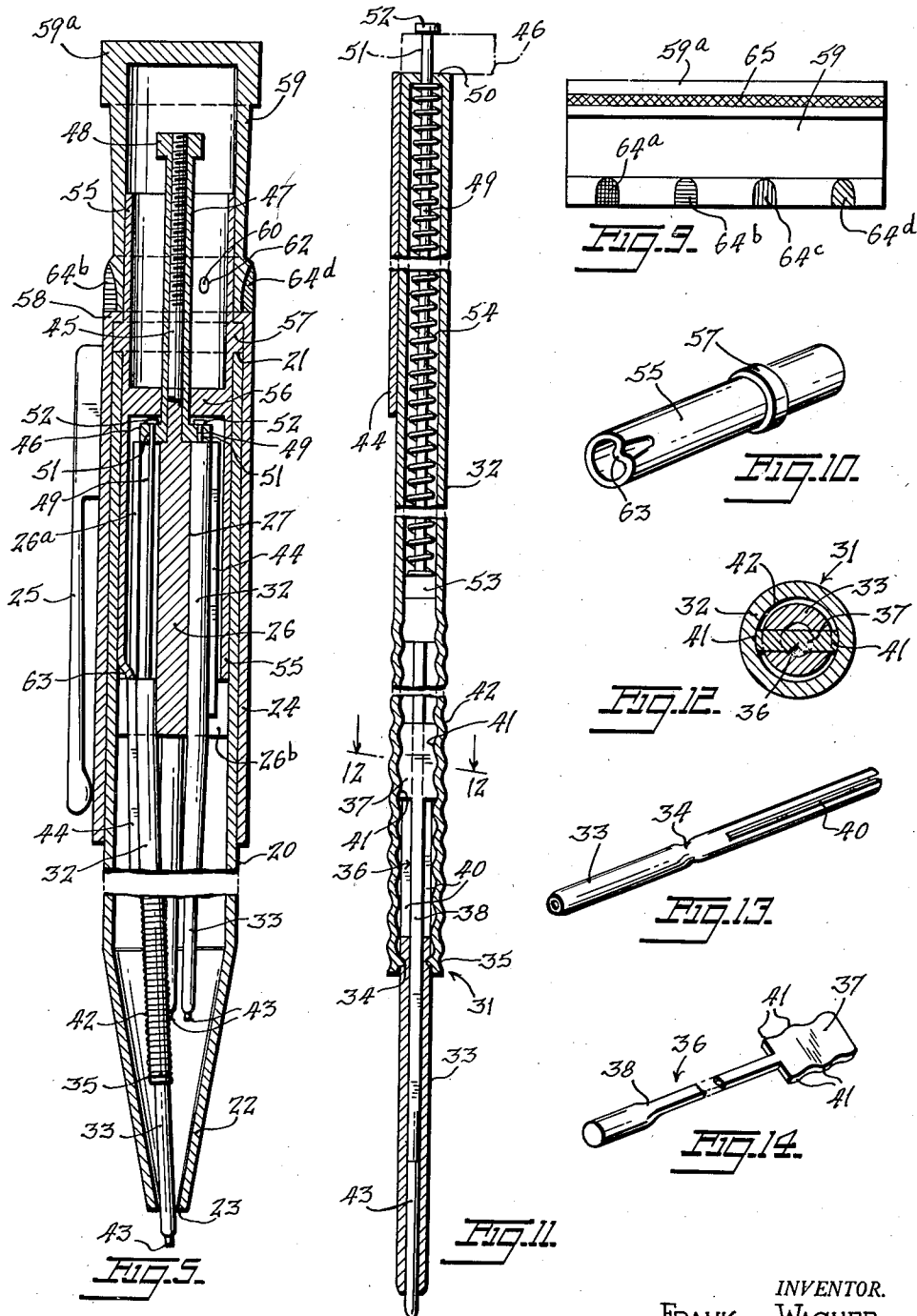
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2 SHEETS—SHEET 2



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UNITED STATES PATENT OFFICE

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FOUR-COLOR MAGAZINE PENCIL

Frank Wagner, Laurel Hill, N. Y.

Application March 28, 1951, Serial No. 217,905

4 Claims. (Cl. 120—14.5)

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This invention relates to new and useful improvements in a magazine pencil.

More particularly, the present invention proposes certain improvements in a magazine or so-called "four-color" pencil designed so that projection of any desired one of the several writing material carriers is effected by longitudinal sliding of a tubular barrel relative to a tubular body housing the carriers.

Another object of the present invention proposes rotatively mounting a cap on the outer end of the tubular barrel in a manner so that the cap can be rotated to make selection of the desired writing material carrier which is to be extended from the tubular body.

A still further object of the present invention proposes a member fixedly mounted within the tubular body and having about its periphery grooves within which the writing material carriers are slidably supported in a manner to be selectively extended to operative position by the sliding action of the tubular barrel relative to the tubular body.

Still further, the present invention proposes providing each of the writing material carriers with a self contained resilient means connected in a novel manner to said member for holding said carriers in a position retracted into the tubular body.

Another object of the present invention proposes a pusher sleeve which is rotatively and slidably positioned relative to the member and which is rotatively but non-slidably connected to said tubular barrel and fixedly connected to said cap in a manner to be brought into an operative position with relation to one of the writing material carriers when the cap is rotated and to eject that one carrier when the tubular barrel is slid relative to the tubular body.

The present invention further proposes providing each of the writing material carriers at their ends located within the grooves of the members with radially extended ribs and providing the pusher sleeve with a single inwardly pressed portion arranged in a manner to be brought into position over the top end of the ribs as the cap is turned to effect the extension of the carriers when the tubular barrel is slid.

Another object of the present invention proposes providing each of the writing material carriers with rotatively mounted tubular members at their writing ends arranged in a manner to be turned relative to the carrier in the extended position thereof for extending the writing material or writing leads carried by each of the carriers.

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Still further, the present invention proposes arranging the ribs previously referred to so that they function to maintain the writing material carriers against rotation so that the rotatively mounted tubular members can be rotated to extend the writing material of each of the carriers.

The present invention further proposes the construction of a magazine pencil which is simple and durable, which is effective for its intended purposes and which can be manufactured and sold at a reasonable cost.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is a side elevational view of the magazine pencil constructed in accordance with the present invention and shown with all of the writing material carriers in a retracted position.

Fig. 2 is a view similar to Fig. 1, but with one of the writing material carriers shown in its operative extended position.

Fig. 3 is an enlarged longitudinal sectional view taken on the line 3—3 of Fig. 1.

Fig. 4 is an enlarged detailed view of a portion of Fig. 3.

Fig. 5 is an enlarged view similar to Fig. 3, but with a portion of the center thereof broken away and showing the position of the parts in the operative extended position of one of the writing material carriers.

Fig. 6 is an enlarged transverse sectional view taken on the line 6—6 of Fig. 3.

Fig. 7 is an enlarged transverse sectional view taken on the line 7—7 of Fig. 4, but with dot and dash lines added to show the position of the pusher sleeve.

Fig. 8 is an enlarged transverse sectional view taken on the line 8—8 of Fig. 4.

Fig. 9 is a developed view of the cap used on the pencil.

Fig. 10 is a perspective view of the pusher sleeve, per se.

Fig. 11 is an enlarged longitudinal sectional view of one of the writing material carriers, per se.

Fig. 12 is an enlarged transverse sectional view taken on the line 12—12 of Fig. 11.

Fig. 13 is a perspective view of one of the rotatively mounted tubular members located at the writing end of the writing material carrier.

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Fig. 14 is a perspective view of one of the feed members used in the writing material carriers.

The magazine pencil, according to the present invention, includes a tubular body 20 which is preferably shaped of metal and which is octagonal in cross-section over the greater portion of its length. If desired, the tubular body can be molded of one of the synthetic resin materials—either thermosetting or thermoplastic—or of any other similar material commonly used in the construction of the so-called mechanical or four-color pencils. The tubular body has an open end 21 and a tapered end 22 formed with a single hole 23 located on the longitudinal axis of the tubular body 20.

Slidably positioned over the open end 21 of the tubular body 20, there is a tubular barrel 24 preferably formed of the same material used for forming the tubular body. However, if desired, the tubular barrel 24 can be formed of material different from that used for forming the tubular body 20 so as to enhance the decorative appearance of the pencil. The tubular barrel 24 is also octagonal in cross-section and the tolerances between the outer periphery of the tubular body 20 and the inner periphery of the tubular barrel 24 is such that the frictional contact between those surfaces will hold the tubular barrel 24 in any position to which it might be slid along the length of the tubular body 20. It is appreciated, of course, that the interfitted octagonal shapes of the tubular body 20 and the tubular barrel 24 will hold those parts against rotative movement with relation to each other, but still leave them free for axial sliding movements.

Fixedly secured to one side of the tubular barrel 24 there is the usual clip 25 by which the pencil can be hooked into position on the material of a garment pocket, within a handbag or to similar supports, all as generally known in the art.

Located within the tubular body 20 closely adjacent the open end 21 thereof, there is a member 26 formed of metal and having a plurality of grooves 27 evenly spaced about the periphery thereof. The top portion 26^a of the member 26, see particularly Fig. 7, is round in cross-section and of a diameter smaller than the inside area of the tubular body 20. The bottom portion 26^b of the member 26 is octagonal in shape conforming to the interior cross-sectional shape of the tubular body 20. The bottom portion 26^b is considerably shorter than the top portion 26^a and the octagonal shape of the bottom portion functions to retain the member 26 against rotative movement relative to the tubular body 20. The member 26 is secured in position within the tubular body 20 by means of a set screw 28, see Fig. 8, which passes through a hole 29 formed in the tubular body 20 and which is threaded into a recess 30 formed in one side of the bottom portion 26^b of the member 26.

A plurality of writing material carriers 31 is positioned within the tubular body 20—one carrier 31 for each of the grooves 27 in the member 26. In the illustrated embodiment of the invention, the member 26 is formed with four grooves 27 so that there are four writing material carriers 31. As specifically shown in Fig. 11, each of the writing material carriers 31 is formed of a main tubular body portion 32 and a rotatively mounted tubular member 33 extended from one end of the main tubular body portion 32. Intermediate of its ends, the tubular member 33 is formed with an annular groove 34, see Figs. 11 and 13, and the adjacent end of the main body portion 32 has a

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rib 35 pressed into the groove 34 rotatively interconnecting the body portion 32 and the tubular member 33.

A feed member 36 is positioned within each of the tubular members 33. The feed members 36 have flat head portions 37 and integral stem portions 38. The flat head portions have their side edges extending through slots 40 formed in diametrically opposite sides of the tubular members 33 and provided with exposed thread members 41, see particularly Fig. 14. A continuous screw thread is formed in the adjacent end of the tubular body portion 32 and is engaged by the thread members 41, as shown most clearly in Fig. 11. The free end of the stem portions 38 of the feed members 36 are engaged behind pieces of lead 43 slidably positioned within the tubular members 33. Thus, when the tubular members 33 are turned in the right direction relative to the tubular body portions 32, the feed members 36 will be moved axially within the tubular members 33 to extend the leads 43 from the ends of the tubular members to be effectively held for writing purposes. As is generally known in the art of mechanical pencils, the leads 43 are frictionally held against falling axially out of the ends of the tubular members 33. It is appreciated, of course, that each of the writing material carriers 31 is provided with a lead 43 of a different color.

The end portions of the tubular body portions 32 of the writing material carriers 31 are slidably positioned within the grooves 27 of the member 26. The inner ends of the grooves 27 are substantially completely round, as shown in Figs. 7 and 8 to nearly completely encircle the body portion 32. Those top end portions of the tubular body portions 32 have fixed thereto ribs 44 which are slidably disposed in the outer portions of the grooves 27 so that those ribs extend radially of the member 26. The ribs 44 function to retain the tubular body portions 32 of the writing material carriers 31 for rotating, so that when the writing ends of the carriers 31 are extended through the hole 23 in the tapered end 22 of the tubular body 20, as shown in Figs. 2 and 5, the projecting end of the tubular members 33 can be ripped to be turned relative to the tubular body portion 32 for extending the lead 43.

Means is provided for holding the writing material carriers 31 in a position retracted into the tubular body 20, as shown in Fig. 3. That holding means is a resilient one and is comprised of a rod 45 which extends coaxially from the end of the member 26 at the open end 21 of the main body 20. The rod 45 is integrally formed with the member 26 and has a small apertured disc 46 engaged thereon and rested against the end of the member 26. The disc 46 is maintained in position against the end of the member 26 by means of a tubular rod 47 which is threaded onto the rod 45 and against the adjacent face of the disc 46, see Figs. 3 to 5. The end of the tubular rod 47 remote from the disc 46 is formed with an enlarged head 48 for a purpose which will become clear as this description proceeds.

Slidably positioned within each of the tubular body portions 32 of the writing material carriers 31, there is a stem 49 which has its top end passed through an inwardly directed annular shoulder 50 formed at the top end of the tubular body portion 32. The free outer ends of the stems 49 are passed through holes 51 formed in the disc 46 and formed with enlargements 52 which retain the stems 49 from being pulled out of the holes 51. The inner ends of the stems 49

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have mounted thereon blocks 53 and expansion springs 54 within the tubular body portions 32, see Figs. 4 and 11, are engaged about the stems 49 and operate between the blocks 53 and the shoulders 50 to retain the writing material carriers 31 in raised positions within the grooves 27 and against the bottom face of the disc 45. While the springs 54 exert a sufficient force to maintain the writing material carriers 31 in the inoperative position retracted into the tubular body 20, those springs do not exert a force sufficient to overcome the frictional contact between the surfaces of the tubular body 20 and the tubular barrel 24 which holds the barrel 24 in any desired position on the tubular body to which the barrel 24 might be manually slid.

Means is further provided for moving a desired writing material carrier 31 into a desired operative extended position as shown in Figs. 2 and 5 to be used for writing. That means is comprised of a pusher sleeve 55 which is circular in cross-section. The sleeve 55 is of a diameter to pass over the top portion 26^a of the member 26 and to fit rotatively within the open top end 21 of the tubular body 20 with the outer periphery of that sleeve contacting the flat surfaces of the walls of that tubular body. Intermediate of its ends, the pusher sleeve 55 is formed with an internal collar 56, see Figs. 3 to 5, which surrounds the tubular rod 47. When the pencil is in the inoperative position shown in Figs. 1 and 3, the top face of the collar 56 abuts the bottom face of the enlarged head 48 holding the tubular barrel 24 from being pulled off the end of the tubular body 20, as will become clear as this specification proceeds. In the operative position of the pencil shown in Figs. 2 and 5, the bottom face of the collar 56 abuts the top face of the enlargements 52 which engage the top face of the disc 46.

Externally, and at a location slightly above the collar 56, the pusher sleeve 55 is formed with an external collar 57. The outer end of the tubular barrel 24 is formed with an inwardly directed annular flange 58 which rests on the top face of the annular collar 57. Fitted over the top of the pusher sleeve 55 there is a hollow cap 59. The cap is secured to the pusher sleeve 55 by means of a set screw 60 threaded through complementary holes 61 and 62 formed in the cap 59 and the pusher sleeve 55 respectively. The bottom end of the cap 59 is seated down on the top face of the flange 58 so that the pusher sleeve 55, through the medium of the cap 59, can be rotated relative to the tubular barrel 24. The relationship between the collar 57, flange 58 and the cap 59 is such that the pusher sleeve 55 cannot be moved axially relative to the tubular barrel 24, but the pusher sleeve 55 moves as a unit with the tubular barrel 24 when the barrel is slid relative to the tubular body 20.

The end of the pusher sleeve 55 remote from the cap 59 is formed with a single inwardly pressed portion 63, see Figs. 3, 5 and 10, for engagement with the top ends of the ribs 44 carried by the writing material carriers 31, in the various rotative positions of the pusher sleeve 55. When the pusher sleeve 55 is in the raised position shown in Fig. 3, the inwardly pressed portion 63 will be located above the top of the member 23 so that the pusher sleeve 55 will be free to be rotated within the tubular body 20 by turning the cap 59 relative to the tubular barrel 24. However, in the operative position of the pencil, shown in Fig. 5, the inwardly pressed portion 63 will be located

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within one of the grooves 27 holding the pusher sleeve against being rotated until such time as the tubular barrel 24 is again raised to its inoperative position relative to the tubular body.

Indicator means is provided in connection with the cap 59 for indicating which of the writing material carriers 31 the inwardly pressed portion 63 is aligned with. The indicator means is characterized by four equally spaced notches 64^a, 64^b, 64^c and 64^d formed about the end of the cap 59 abutted against the flange 59. Each of the notches is painted a different color to indicate the colors of the four leads 43 within the writing material carriers 31. As specifically shown in Fig. 9, the notch 64^a is black, the notch 64^b is blue, the notch 64^c is red and the notch 64^d is green. One of each of the carriers 31 has a colored lead corresponding in color to the color of one of the notches 64^a, 64^b, 64^c or 64^d. The colors shown on the drawing are by way of illustration only and if desired, the notches can be differently colored to indicate other colored leads 43 to be positioned within the carriers 31.

To indicate the particular carrier 31 with which the inwardly pressed portion 63 is aligned, the cap 59 must be turned until the desired colored notch 64^a, 64^b, 64^c or 64^d is brought in position directly over the pocket clip 25. In such position, the inwardly pressed portion 63 will be brought directly into position directly over the rib 44 of the writing material carrier 31 having the desired colored lead 43.

Remote from the tubular barrel 24, the head 59 is formed with an enlarged portion 59^a which has peripheral knurling 65 by which a grip can be had on the cap for turning the same to bring the desired colored notch 64^a, 64^b, 64^c or 64^d into position over the clip 25.

The manner of using the magazine pencil constructed in accordance with the present invention, is as follows:

Normally the pencil will be carried in a garment pocket, pocketbook or the like with the tubular barrel 24 in the position shown in Figs. 1 and 3 in which all of the writing material carriers 31 are retracted into the tubular body 20. For the purpose of discussion, let it be assumed that it is desired to write with the blue colored lead 43. To do that, the cap 59 is first turned to bring the blue notch 64^b into position directly over the clip 25, as shown particularly in Figs. 1 and 2. Rotation of the cap 59 also rotates the pusher sleeve 55 bringing the inwardly pressed portion 63 into position directly over the rib 44 of the writing material carrier 31 having the blue lead 43. When the rotation of the cap 59 is completed, the tubular barrel 24 is pushed downward on the top end of the tubular body 20 causing the inwardly pressed portion 63 to enter the groove 27 with which it is aligned and pushed downward on the respective rib 44 and move that writing material carrier 31 downward within the groove 27. Sliding of that writing material carrier 31 is effected against the holding action of its spring 54 and the free end of that carrier will slide along the inner face of the tapered end 22 of the tubular body until the lead 43 and a portion of the tubular member 33 of that carrier is extended from the hole 23 in the tapered end 22 of the tubular body 20, as shown in Figs. 2 and 5. The pencil can now be used to make blue markings and the frictional contact between the surfaces of the tubular body 20 and the tubular barrel 24 is sufficient to hold the pencil in the operative position against the action of the spring 54 of the ex-

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tended carrier and any normal writing pressures applied to the pencil. It is appreciated, of course, that there is sufficient play between the carriers and the material of the member 26 defining the grooves 27 to permit the carriers 31 to assume the angular operative position shown in Fig. 5.

As the projected end of the lead 43 becomes worn away, it is merely necessary to grip the projecting end of the tubular member 33 and turn the same to cause the feed member 36 of that carrier to further extend the lead 43. The engagement of the rib 44 with the groove 27 will hold the entire carrier from turning during rotation of the tubular member 33. The supply of lead 43 in any one of the carriers 31 can also be replaced while the carrier is in the operative extended position shown in Fig. 5.

When writing is completed and it is desired to draw the carrier 31 back into position within the tubular barrel 24, it is merely necessary to draw upward on the tubular barrel 24 which will also draw upward on the pusher sleeve 55 and move the inwardly pressed portion 63 out of the top end of the groove 27 with which it was engaged. That will free the extended writing material carrier 31 to be drawn back to its inoperative position shown in Fig. 3 by the respective spring 54. So long as the inwardly pressed portion 63 is located within one of the grooves 27 it is impossible to rotate the cap 59.

When the tubular barrel 24 is pulled completely outward, the cap 59 is again free to be rotated to bring a differently colored notch into alignment with the clip 25 so that on next downward movement of the tubular barrel 24 the writing material carrier 31 carrying the lead 43 corresponding to that differently colored notch will be operatively extended from the hole 23 in tapered end 22 of the tubular body 20.

While I have illustrated and described the preferred embodiment of my invention, it is to be understood that I do not limit myself to the precise construction herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

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

1. A magazine pencil comprising a tubular body having one end open and its other end tapered to a hole on the axis of said body, a tubular barrel axially slidably but non-rotatively positioned over the said open end of said body, a member fixedly mounted within said body adjacent the open end thereof and formed with a plurality of grooves, a plurality of writing material carriers one for each of said grooves positioned within said body to have their writing ends extended through said hole, each of said carriers having their top ends slidably engaged in one of said grooves, resilient means holding said carriers in raised positions in said grooves in which their writing ends will be retracted into said body, and means controlled by axial sliding of said barrel relative to said body for selectively sliding one of said carriers relative to said member and against the action of said resilient means for extending the writing end thereof through said hole, said carrier sliding means comprising a pusher sleeve within the open end of said tubular body and above the adjacent end of said member, a rod extending concentrically from said member, an internal shoulder formed within said pusher sleeve and surrounding said rod,

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means retaining said pusher sleeve from being pulled off the end of said rod, means connecting said pusher sleeve to said tubular barrel for rotative movement relative thereto, said pusher sleeve having an end portion projecting from said tubular barrel, a cap fixed onto the projecting end of said tubular barrel by which said sleeve can be rotated relative to said tubular barrel, ribs on said carriers extended outward in said grooves, and an inwardly pressed portion formed on said sleeve to be brought selectively into position over the ribs of said carriers as said sleeve is rotated.

2. A magazine pencil comprising a tubular body having one end open and its other end tapered to a hole on the axis of said body, a tubular barrel axially slidably but non-rotatively positioned over the said open end of said body, a member fixedly mounted within said body adjacent the open end thereof and formed with a plurality of grooves, a plurality of writing material carriers one for each of said grooves positioned within said body to have their writing ends extended through said hole, each of said carriers having their top ends slidably engaged in one of said grooves, resilient means holding said carriers in raised positions in said grooves in which their writing ends will be retracted into said body, and means controlled by axial sliding of said barrel relative to said body for selectively sliding one of said carriers relative to said member and against the action of said resilient means for extending the writing end thereof through said hole, said carrier sliding means comprising a pusher sleeve within the open end of said tubular body and above the adjacent end of said member, a rod extending concentrically from said member, an internal shoulder formed within said pusher sleeve and surrounding said rod, means retaining said pusher sleeve from being pulled off the end of said rod, means connecting said pusher sleeve to said tubular barrel for rotative movement relative thereto, said pusher sleeve having an end portion projecting from said tubular barrel, a cap fixed onto the projecting end of said tubular barrel by which said sleeve can be rotated relative to said tubular barrel, ribs on said carriers extended outward in said grooves, and an inwardly pressed portion formed on said sleeve to be brought selectively into position over the ribs of said carriers as said sleeve is rotated, said pusher sleeve retaining means comprising an enlarged head formed on the free end of said rod to be engaged by said internal collar.

3. A magazine pencil comprising a tubular body having one end open and its other end tapered to a hole on the axis of said body, a tubular barrel axially slidably but non-rotatively positioned over the said open end of said body, a member fixedly mounted within said body adjacent the open end thereof and formed with a plurality of grooves, a plurality of writing material carriers one for each of said grooves positioned within said body to have their writing ends extended through said hole, each of said carriers having their top ends slidably engaged in one of said grooves, resilient means holding said carriers in raised positions in said grooves in which their writing ends will be retracted into said body, and means controlled by axial sliding of said barrel relative to said body for selectively sliding one of said carriers relative to said member and against the action of said resilient means for extending the writing end thereof through said hole, said carrier sliding means comprising a pusher sleeve

within the open end of said tubular body and above the adjacent end of said member, a rod extending concentrically from said member, an internal shoulder formed within said pusher sleeve and surrounding said rod, means retaining said pusher sleeve from being pulled off the end of said rod, means connecting said pusher sleeve to said tubular barrel for rotative movement relative thereto, said pusher sleeve having an end portion projecting from said tubular barrel, a cap fixed onto the projecting end of said tubular barrel by which said sleeve can be rotated relative to said tubular barrel, ribs on said carriers extended outward in said grooves, and an inwardly pressed portion formed on said sleeve to be brought selectively into position over the ribs of said carriers as said sleeve is rotated, said connecting means comprising an external collar formed on said pusher sleeve and spaced slightly from said cap, and an inwardly directed flange formed on said tubular barrel and engaged between said external collar and said cap.

4. A magazine pencil comprising a tubular body having one end open and its other end tapered to a hole on the axis of said body, a tubular barrel axially slidably but non-rotatively positioned over the said open end of said body, a member fixedly mounted within said body adjacent the open end thereof and formed with a plurality of grooves, a plurality of writing material carriers one for each of said grooves positioned within said body to have their writing ends extended through said hole, each of said carriers having their top ends slidably engaged in one of said grooves, resilient means holding said carriers in raised positions in said grooves in which their writing ends will be retracted into said body, and means controlled by axial sliding of said barrel relative to said body for selectively sliding one of said carriers relative to said member and against the action of said resilient means for extending the writing end thereof through said hole, said

carrier sliding means comprising a pusher sleeve within the open end of said tubular body and above the adjacent end of said member, a rod extending concentrically from said member, an internal shoulder formed within said pusher sleeve and surrounding said rod, means retaining said pusher sleeve from being pulled off the end of said rod, means connecting said pusher sleeve to said tubular barrel for rotative movement relative thereto, said pusher sleeve having an end portion projecting from said tubular barrel, a cap fixed onto the projecting end of said tubular barrel by which said sleeve can be rotated relative to said tubular barrel, ribs on said carriers extended outward in said grooves, and an inwardly pressed portion formed on said sleeve to be brought selectively into position over the ribs of said carriers as said sleeve is rotated, and a clip mounted on one side of said tubular barrel, said cap having at its end a plurality of evenly spaced notches one for each of said carriers to be selectively brought into position over said clip to indicate which of said carriers the inwardly pressed portion of said pusher sleeve is aligned with, said notches being differently colored to correspond with the color of the writing leads carried by said writing material carriers.

FRANK WAGNER.

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