

May 28, 1935.

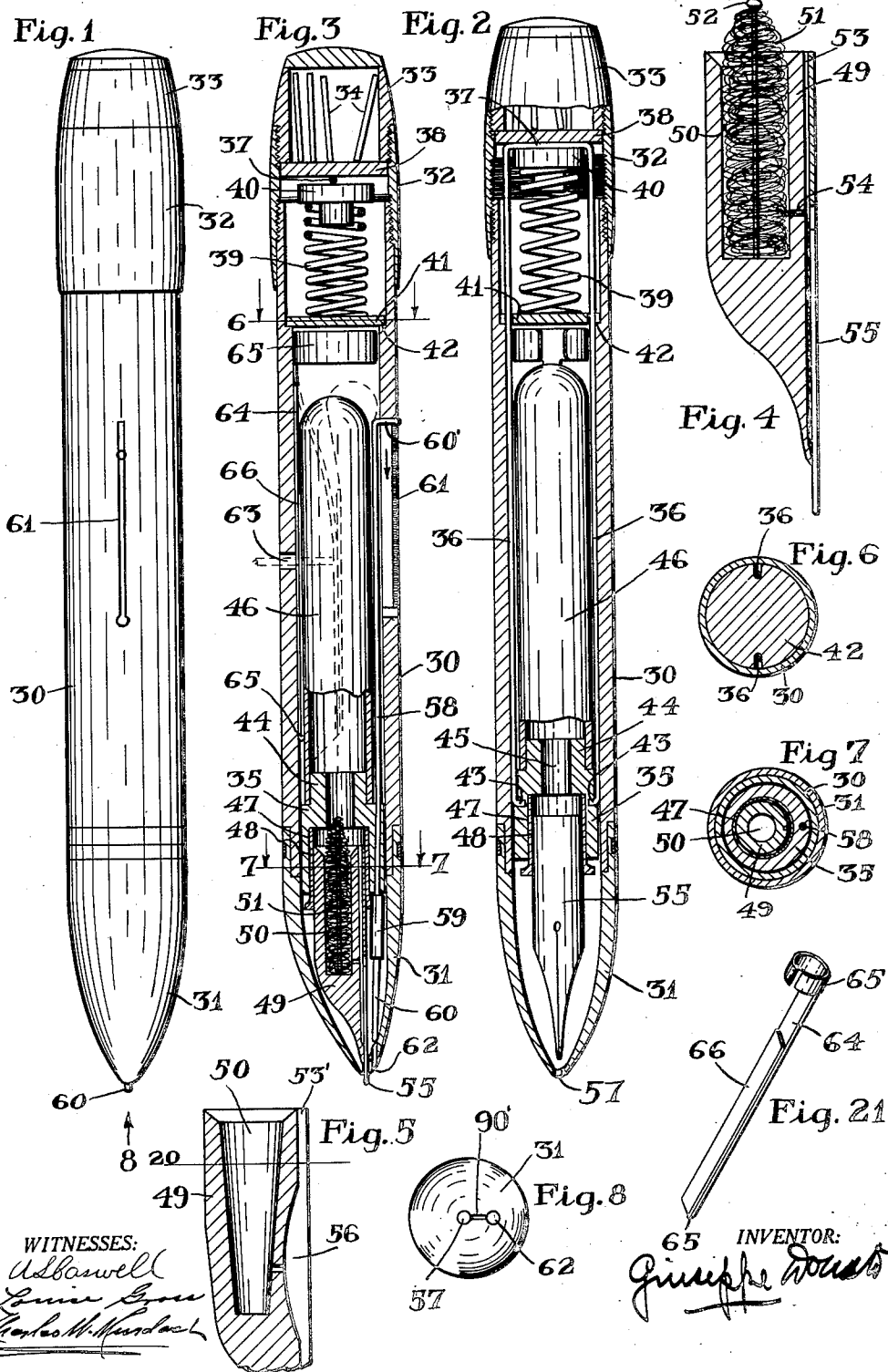
G. DONATO

2,002,501

COMBINATION WRITING IMPLEMENT

Filed Feb. 9, 1934

3 Sheets-Sheet 1



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2,002,501

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3 Sheets-Sheet 2

Fig. 10

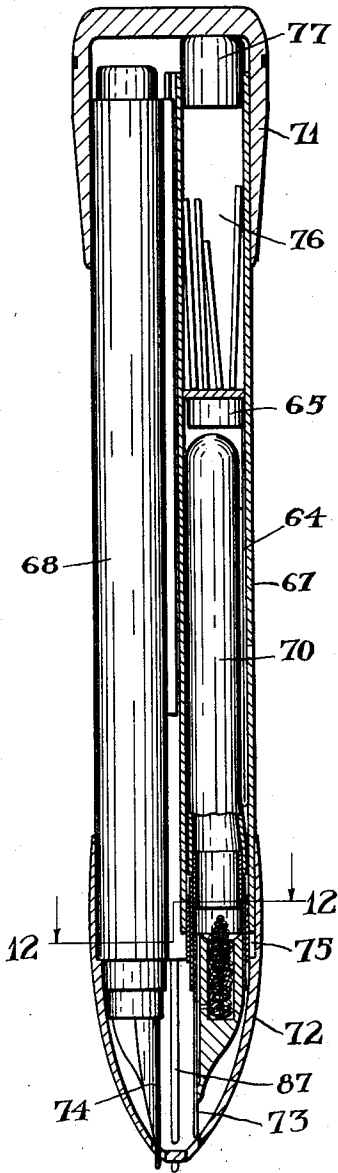


Fig. 9

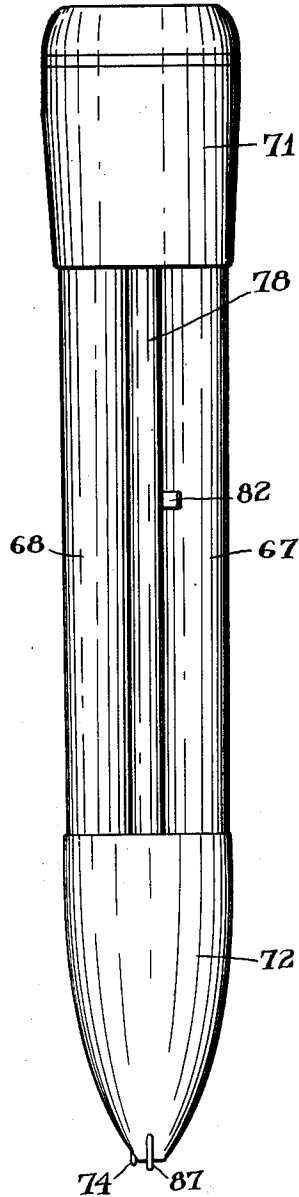


Fig. 11

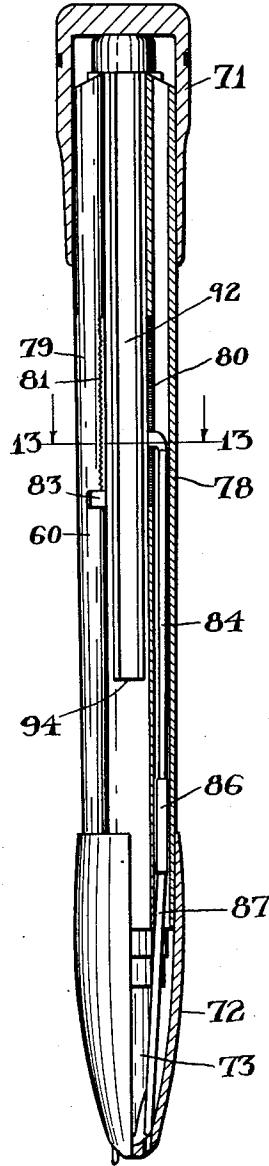
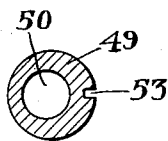


Fig. 20



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3 Sheets-Sheet 3

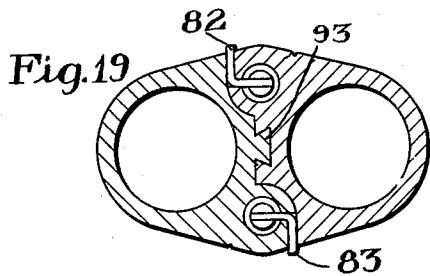
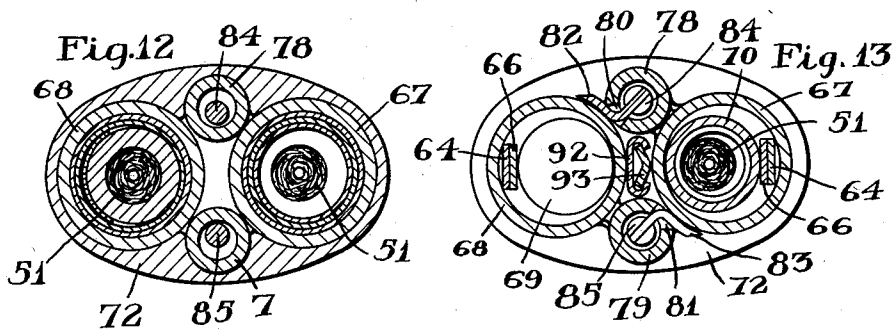
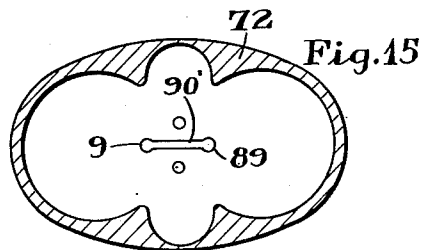
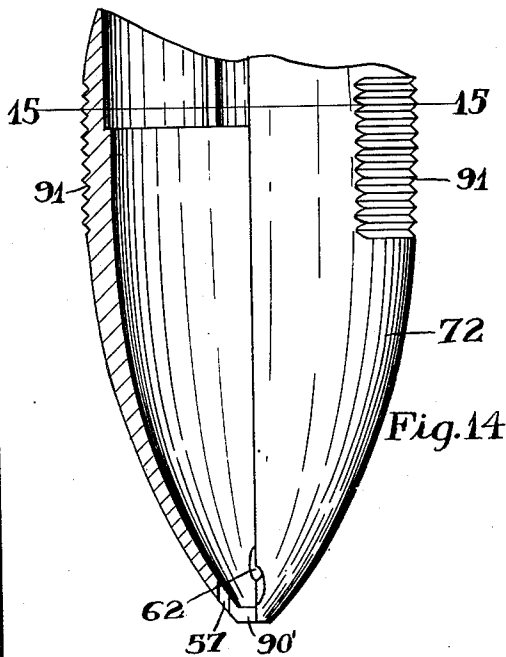
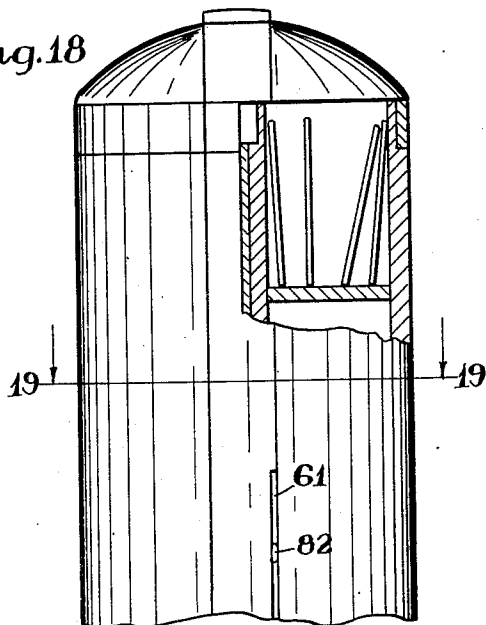


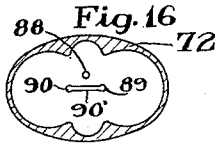
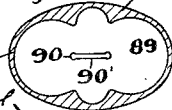
Fig. 18



WITNESSES:

Fig. 17 72"

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COMBINATION WRITING IMPLEMENT

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Application February 9, 1934, Serial No. 710,390

10 Claims. (Cl. 120-9)

This invention relates to combination pencil and fountain pen and has for an object to provide an instrument of the type wherein either of the instrumentalities may be projected into writing position and that while the instrument is held in writing grasp in the hand.

A further object of the invention is to provide in the instrument of the type a pen movable longitudinally within a barrel in such manner that its extreme point projects slightly through a perforation in a cap at the end of the barrel, the major part of the pen remaining within the structure.

A further object of the invention is to provide an instrument of the type having an extremity conoidal in shape through the apex of which may be projected electively a pen or a pencil as the writer progresses in its use which are the basic features of my invention.

A further object of the invention is to provide an instrument of the type having a barrel wherein is mounted slidably a pen carrying an ink reservoir therewith which said pen is projected to writing position with its point only extending slightly beyond the conoidal end of the barrel structure with means for projecting the lead of a pencil also beyond the point of the conoidal structure.

A further object of the invention is to provide within a single instrument a plurality of pens either of which may be projected to writing position independently of the other and a plurality of pencils the lead of which may be independently projected to writing position which is a generic feature of my invention.

A further object of the invention is to provide a pen structure including a pencil having a cap thereon remaining fixed upon the structure during the operation of both pen and pencil which extend through said cap into operative position, eliminating the use of a removable cap as customarily found in all such structures.

A further object of the invention is to provide in an instrument of the type a barrel having a cap formed as a conoid having a small perforation in its apex with a structure within the barrel carrying a pen the point of which is properly contoured to extend through the perforation in the apex of the conoid with means at the opposite end of the barrel for actuating the pen and its associated structure.

The invention further comprises a body having one or more barrels as a part of such structure within which barrel or barrels are located slidable members each carrying a pen and an ink

reservoir, the barrel being provided with a conoidal cap, perforated at or adjacent to its apex providing for the passage therethrough of the pen or pens to extend merely to such an extent as to be in writing position, the major part of the pen being still retained within the conoidal cap with one or more tubes associated with the barrel or barrels, each of said tubes being provided with a structure adapted to retain the lead of a pencil and means for moving the structure longitudinally of the barrel to project the lead of the pencil through a perforation at or adjacent to the apex of the conoidal cap and into writing position whether the pen be in writing position or not.

Figure 1 is a view of one type of the pen in side elevation with the lead of the pencil projected.

Figure 2 is a sectional view taken substantially upon a diameter showing the internal construction with the lead and pen in withdrawn position.

Figure 3 is a view also substantially on a diameter with the pen projected.

Figure 4 is a detailed sectional view on a scale larger than Figure 3, showing the ink feed in association with the pen.

Figure 5 is a diametrical sectional view through a modified type of the ink feed.

Figure 6 is a transverse sectional view taken on line 6-6 of Figure 3.

Figure 7 is a transverse sectional view taken on line 7-7 of Figure 3.

Figure 8 is an end view of the instrument as indicated by arrow 8 of Figure 1.

Figure 9 is a view in side elevation of the instrument provided with two pens and two pencils.

Figure 10 is a view taken substantially diametrically through two pen barrels.

Figure 11 is a sectional view taken through the pencil barrels.

Figure 12 is a transverse sectional view taken on line 12-12 of Figure 10.

Figure 13 is a transverse sectional view taken on line 13-13 of Figure 11.

Figure 14 is a greatly enlarged view one half in elevation and one half in diametrical section of the conoidal cap for the type of instrument shown at Figure 9.

Figure 15 is a transverse sectional view taken on line 15-15 of Figure 14.

Figure 16 is a view similar to Figure 15 showing accommodation for two pens and one pencil.

Figure 17 is a view similar to Figures 15 and 16 showing accommodation for two pens only.

Figure 18 is a view partly in side elevation and partly broken away of a further modified type.

Figure 19 is a transverse sectional view taken on line 19—19 of Figure 18.

Figure 20 is a transverse sectional view through the pen feeding device for either of the types and as indicated by line 20—20 of Figure 5.

Figure 21 is a view in perspective of the instrumentality employed for collapsing the bag for filling the pen reservoir.

Like characters of reference indicate corresponding parts throughout the several views.

In the simple type of the structure as shown at Figures 1, 2 and 3 a barrel 30 is provided. In this type the barrel is substantially cylindrical. At one end the barrel is provided with the conoidal cap 31. At Figure 3 the conoid is shown slightly distorted, which is the preferred type, but not essential.

At its opposite end the barrel is provided with a sleeve 32 and a cap 33 mounted thereon which provides space which may be employed for a purpose desired; as for instance for containing the extra leads 34.

The term "lead" as employed in this specification and claims is intended to convey such rigid writing medium as is ordinarily found in lead pencils or the like irrespective of the color or actual material from which it is constructed.

Within the barrel 30 a block 35 is mounted to slide and for sliding the block a wire 36 is provided having substantially parallel legs joined by a cross bar 37. Upon this cross bar 37 a disk 38 carried by the sleeve is provided so that as the sleeve 32 is screwed downwardly upon the barrel the disk 38 bears upon the cross bar 37, depressing the legs of the wire 36.

To resist such movement a spring 39 is employed bearing at its upper end against a disk 40 and at its lower end against a disk 41 seated upon an annular shoulder 42 in the barrel.

When, therefore, the sleeve 32 is screwed downwardly from the position shown at Figure 2 to the position shown at Figure 3, the block 35 has moved downwardly as shown in those figures.

To insure the proper function of the wire 36 to move the block the ends of the wire are bent inwardly to form hooks 43 hooking into the block.

This block 35 is provided with a reduced neck 44, with a passage 45 therethrough and a collapsible and resilient bag 46 mounted upon the reduced part.

The block is also provided with an axial opening 47 in which is mounted a sleeve 48. Within this sleeve 48, which may be omitted if desired, the pen and feeding organization are inserted. This comprises a member 49, (see Figure 4) having a passage 50 which is preferably filled with an absorbent material 51 supported in any approved manner as by the pin 52. This absorbent material is in communication with the passage 45 leading from the ink reservoir 46 so that the ink contained within the reservoir is absorbed in the absorbent material 51. Member 49 is provided with a passage 53 which is also in communication with the ink supply with an offset or lateral passage 54 which communicates from the absorbent material to the passage 53.

After this has been inserted into the block 35, the pen 55 of any usual and well known type may be inserted between the member 49 and the sleeve 48 when employed, or if the sleeve 48 is omitted between the member 49 and the walls of the opening 47.

Instead of making the member 49 simple as shown at Figure 4, a modification as shown at

Figure 5 may be substituted, wherein the passage 53 is indented at 56 to form a pool which will supply a greater volume of ink to the pen than with this passage uniform throughout.

The conoidal cap 31 is provided with a perforation 57 substantially in its apex. The exact position, however, may be varied as may be found desirable. The movement of the pen structure as outlined is such that the very extreme point only of the pen 55 is projected through the perforation 57 as indicated more particularly at Figure 3 of the drawings.

Associated also with the pen structure is a pencil structure. This comprises a pusher wire 58 having a sleeve 59 of proper contour to receive and retain a lead 60. For moving the lead to operative position a slot 61 is provided in the side of the barrel and the wire is provided with an angular part 60' which extends to or beyond the surface of the barrel as indicated at Figures 1 and 3. The movement of the wire in the direction indicated by the row in Figure 3 will move the lead 60 so that it will be projected through the perforation 62 to the position shown at Figure 1.

For filling the reservoir 46 a perforation 63 is provided through the barrel through which any slender instrument may be inserted. A spring 64 is supported by means of a resilient ring 65 (see Figure 21) and extends downwardly along the side of the bag 46. This spring is provided with the return bend 65 whereby a part 66 is provided which will not follow the curvature of the spring 64 when the instrument is inserted as indicated in dotted lines at Figure 3, but will compress the bag as also indicated in dotted lines at that figure. The resiliency of the bag will, of course, tend to expand the bag to induct ink within the bag through the structure in the usual well known manner, the cap 31 being previously preferably removed for that purpose.

In the type shown at Figures 9 to 11 inclusive, two barrels 67 and 68 are provided, each similarly accommodating a bag 69 and 70 which communicate with the pen through substantially the same structure as shown at Figures 2 and 3. Instead, however, of moving this pen structure by means of a threaded sleeve the cap 71 is fixed relative to the structure of the barrels 67 and 68, slidable independently relative thereto and to the conoidal cap 72 so that either the pen 73 or 74 may be electively projected by simply pushing longitudinally upon the barrel 67 or 68 which carries the pen which it is desired to use. It is, of course, contemplated that ink of different colors shall be employed in the two bags 69 and 70, and that therefore the projected pen will write the color of ink carried in that organization. It is obvious that as the structure shown at Figures 9 to 11 inclusive is held in the hand in writing position either of the barrels 67 or 68 may be moved to writing position, thereby changing from one color to another without changing the position of the pen structure in the end, and that substantially instantaneously.

The conoidal cap 72 is made slidable upon the barrels 67 and 68 as indicated by space 75 at Figure 10. When it is desired that both pens shall project simultaneously the cap 72 is moved to close the space 75, whereupon both pens have their points extended beyond the conoidal cap and may be employed by simply rolling the instrument in the fingers to bring either of said pens into operative position.

As shown, each of these barrels is provided with an extension forming chambers 76 which

may be closed by any type of block 77. It is contemplated that this block 77 shall be a type to serve as an eraser and is brought into use by the removal of the cap 71.

The bags 69 and 70 are filled by the use of the same type of filling device shown at Figure 21, comprising the ring 65, spring 64 and its associated parts.

In the angles provided by the associated barrels 67 and 68 smaller barrels 78 and 79 are provided. These barrels 78 and 79 are provided with slots 80 and 81 through which extend respectively the members 82 and 83. These members 82 and 83 are associated with wires 84 and 85 which slide longitudinally within the barrels 78 and 79 and are each provided with a sleeve 86 which receives and retains a lead 87.

While two of these barrels 78 and 79 with their lead and accompanying mechanisms have been shown it is obvious that either or both may be omitted. At Figure 16 a single perforation 88 is shown to accommodate one lead the other being omitted, while at Figure 17 both leads are indicated as omitted openings 89 and 90 being provided to accommodate both of the pen points. Joining these openings 89 and 90 or otherwise communicating therewith is a vent 90 which relieves internal suction.

To provide for properly sliding the cap 72 or the barrels 67 or 68 relative to the cap 72, the cap is provided with knurled portions 91 shown more particularly at Figure 14.

To provide for maintaining the two barrels in operative relation to each other while being moved independently one is provided with a channel chamber 92 and the other with a cooperating part 93 as shown at Figure 13. These members 92 and 93 extend from the upper end of the pen longitudinally to about the point indicated at 94 in Figure 11. By stopping at this point a certain amount of resiliency is provided between the barrels 67 and 68 whereby the barrels tend to spread when the conoidal cap 72 is pushed forward in disengaging use of pens and therefore exert a tension upon the cap to maintain the cap in position when the cap is so located.

As an alternative a dove-tailed connection 93 is shown at Figure 19. As shown at Figure 13 the barrels 67, 68, 78 and 79 each stand independently and in full sight of the user. In the type shown at Figure 19, however, all are formed within the moulded or otherwise produced structure whereby a device is produced which is substantially elliptical in transverse section all of the barrels being contained within the ellipse.

Figure 18 is in view partly in side elevation and partly broken away of the type shown in transverse section at Figure 19 and discloses the configuration of the barrels in that type.

In operation, the single type as shown at Figures 1 to 3 inclusive is employed by manipulating the cap 33 to actuate the sleeve 32 and thereby depress the spring of the pen structure forcing the point only of the pen through the perforation 57 as shown at Figure 3. The advantage thus attained is that substantially the entire pen is covered and the fingers of the user do not become smeared with ink as in the use of ordinary pens. Also when the pen is retracted to the position shown at Figure 2 it is completely enclosed and it is not necessary to remove and replace a cap at each use of the pen, the pen being sufficiently protected and covered when withdrawn within the cap 31, without any additional or auxiliary cap. The pen thus extended may be

employed in the usual manner and whenever it is found desirable the pencil may be conveniently manipulated with the structure still in writing position so that change may be instantly made from pen to pencil, or reverse, as may be found desirable, in the matter being written.

In the doubled type as shown at Figures 9 to 11 inclusive, either barrel, and therewith accompanying pen may be moved to extend the point of the pen through the conoidal cap in the same position as described in regard to the use of the simpler type shown at Figure 3. Both of such pens may be simultaneously extended, when so desired, and either brought into use simply by rotating the structure in the fingers. The same protection is afforded by the cap 72 as described in regard to the copy 31 of the single barrel type.

In the structure shown at Figures 9 to 13 inclusive where two pencils are likewise disclosed, it is contemplated that leads within the meaning above described of different colors shall likewise be employed and either may, therefore, be used selectively or both may be advanced simultaneously and by mere rotation may be brought into use. These may be one or both extended, while one or both of the pens are also extended so that with the device as shown at these figures, a complete writing instrument capable of writing in two colors of ink and two colors of pencil, with no manipulation whatsoever, is afforded.

I claim:

1. A pen structure comprising a barrel having a conoidal extremity provided with a plurality of perforations adapted for the exertion of writing parts, said perforations being connected by a vent.

2. A device of the class comprising a hollow handle having a hollow multi-perforated conoidal part at the end and a plurality of writing implements movable within the handle, said writing implements having reduced extremities the sizes of the perforations preventing more than said reduced extremities to protrude to writing position.

3. A writing utensil comprising a barrel, a multi-perforated conoidal cap at the end of the barrel forming a part of the utensil, a plurality of writing implements within the barrel and means to move each of said implements independently through some one of said perforations to writing positions and independently withdraw the same within the cap for protection and transportation.

4. A writing utensil comprising a barrel, a multi-perforated conoidal cap at the end of the barrel forming a part of the utensil, a plurality of writing implements within the barrel, such cap having segregated conduits for said implements, and means to move each of said implements independently within its conduit through one of the said perforations to writing positions and independently withdraw same within the cap for protection.

5. A writing utensil comprising a barrel, a multi-perforated conoidal cap at the end of the barrel forming a part of the utensil, a plurality of writing implements within the barrel, said cap having segregated conduits for said implement, each communicating with a perforation and means to move each above said implement independently within its conduit and through some one of said perforations to writing position and independently withdraw the same within the cap for protection and transportation.

6. A writing utensil comprising a barrel, a multi-perforated conoidal cap at the end of the barrel forming a part of the utensil, a plurality

of writing implements within the barrel, some of same implements having reduced extremities and means to move each of said implements independently through some one of said perforations to writing position and to independently withdraw the same within the cap for protection, the perforations being of such size as to permit the reduced ends of the writing implement only to protrude.

10 7. A writing utensil comprising a barrel, a multi-perforated conoidal cap at the end of the barrel forming a part of the utensil, a plurality of writing implements within the barrel, said cap having segregated conduits for said implement, 15 each connecting with a perforation, some of said implements having reduced extremities and means to move each of said implements independently within its conduit through some one of said perforations to writing position, said perforations being of a size to permit the said reduced ends only to protrude to such positions and to extend and withdraw the same within the cap for protection.

20 8. A casing from which a writing implement is projected and retracted, in which the means for projecting and retracting the writing implement consists of a U-shaped wire, the ends of

which are attached to the writing implement while the rear end of the U-portion is forced outwardly by means of a spring enclosed in a cap threadably mounted on the end of the barrel such that when the cap is turned downwardly the spring is compressed and the writing implement projected into writing position and when the cap is turned in the opposite direction the writing implement retracts into the casing. 5

9. The structure as set out in claim 2 in which one of the writing implements is a pen point which is projected and retracted from the conoidal end and the extreme tip only of the pen point projects from the end due to the enlarged upper portions of the pen and sleeve of pen holder engaging around the inner wall of the conoidal cap so that the tip of the pen point will be in alignment with the other writing implements to produce a continual line with a single movement of the hand. 10 15 20

10. In a device of the class described, a barrel having a conoidal end provided with perforations, a pen and pencil structure mounted to slide independently within the barrel and be exerted through the perforations such that the tips only of the pen and pencil project through the end. 25

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