Dec. 7, 1943. W. G. NICHOL 2,336,028

FOUNTAIN PEN

Filed June 24, 1943

FIG. 1.

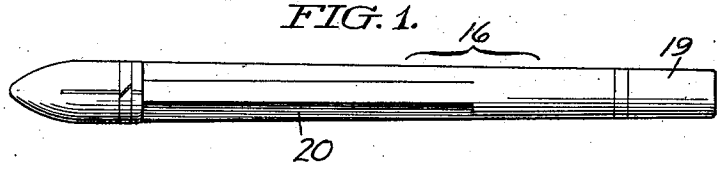


FIG. 2.

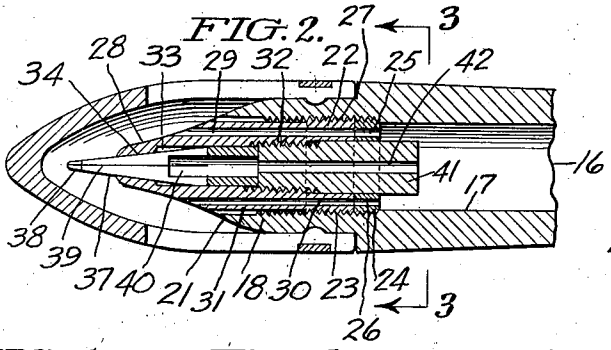


FIG. 3.

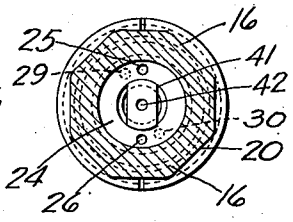


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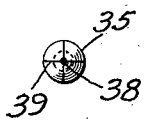


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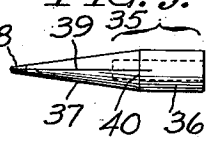


FIG. 6.

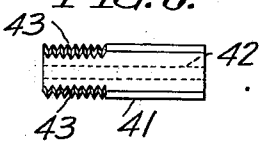


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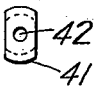


FIG. 8.

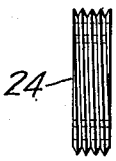


FIG. 9.

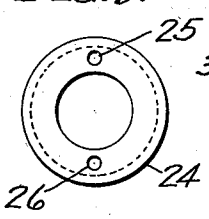


FIG. 10.

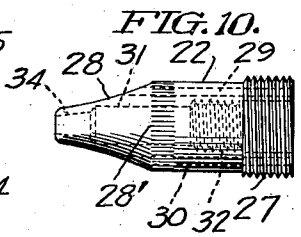


FIG. 11.

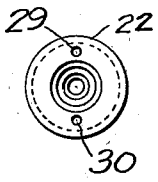


FIG. 12.



FIG. 13.

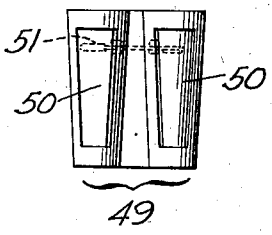


FIG. 14.

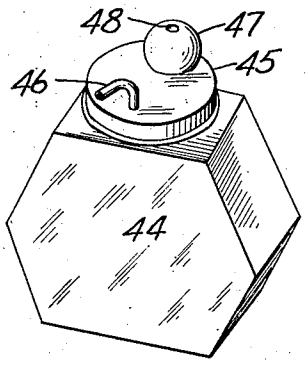
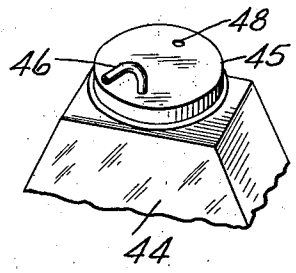


FIG. 15.



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Patented Dec. 7, 1943 2,336,028

UNITED STATES PATENT OFFICE

2,336,028

FOUNTAIN PEN

William G. Nichol, Philadelphia, Pa.

Application June 24, 1943, Serial No. 492,145

6 Claims. (Cl. 120—44)

This invention has reference to fountain pens and, more particularly relates to the species generally known as stylograph pens; that is to say the type which writes similar to a pencil or is devoid of an inserted pen-point or "nib."

The primary object of this invention is the provision of a "no-sack" stylographic fountain pen embodying numerous novel features and advantages whereby its usefulness and serviceability are greatly enhanced.

Another object is to provide a stylographic pen of the indicated species which is capable of holding a maximum quantity of writing ink, which is refillable in a minimum of time and by a simple operation.

A further object is the provision of a stylographic fountain pen wherein the flow of ink can be regulated as desired, without any tendency to "flooding" of the point or the development of a "blob" or drop at the point and incidental difficulty in avoiding blotting and smearing of the writing.

Other objects, with ancillary advantages, will hereby become apparent, or be specifically referred to; all of which will be evident to those conversant with the art upon a full consideration of the construction, arrangement and operation of the means hereinafter disclosed; but it is to be expressly understood this invention is susceptible of other embodiments, or structurally modified forms, coming equally well within the terms and scope of the concluding claims.

In the drawing—

Fig. 1 is a view in elevation of a stylographic pen generally incorporating the fundamental features of this invention,

Fig. 2 is a fragmentary longitudinal section of the writing end portion of the pen, said section being drawn to exaggerated scale for clearer illustration of important details.

Fig. 3 is a cross-section, taken approximately as indicated by the angle arrows in Fig. 2.

Fig. 4 is an end view of the pen point; and Fig. 5 is a longitudinal view of the same.

Figs. 6 and 7 are, respectively, a side view and an end view of a point adjuster component of the improved pen.

Figs. 8 and 9 are, respectively, an edge view and a plan of an annular shut-off whereby filling and re-filling of the pen are easily effected.

Figs. 10 and 11 are, respectively, an elevational view and an end view of an ink-flow regulator or control section included in the pen of this invention.

Figs. 12 and 13 are a plan view and an elevation of a retainer device or holder, for the improved stylographic pen of this invention to take the place of an attached clip.

Fig. 14 is a perspective view of an appropriate filler for my improved fountain pen; and,

Fig. 15 is a fragmentary view of a slightly modified form of the filler.

In describing the form of the invention exemplified by the above captioned drawing herewith, specific terms will be employed for the sake of clarity, but it is to be noted that the scope of said invention is not thereby limited; each such term being intended to embrace all equivalents which perform the same function for an analogous purpose.

Referring now more specifically to the drawing the barrel of the novel stylographic fountain pen of this invention is comprehensively designated by the character 16, said barrel having a co-extensive bore 17. The barrel 16, it is to be particularly noted, is preferably made of a clear or transparent material so that the ink level can always be seen both when the pen is in use, or when filling the same; and said barrel is generally shaped like an ordinary pen-holder with a taper from the diametrically larger front end 18 to the rear end 19. The barrel 16, preferably, also is formed of polygonal cross-section for a substantial extent 20 rearwards of the front end 18 to aid in gripping the pen, when writing, as well as to prevent "rolling" thereof when laid down on a desk, or the like.

The front end 18, as best understood from Fig. 2, is curvilinearly reduced outwards at 21, to correspondingly merge into the outer portion of a controller section or chuck 22, see Figs. 10 and 11. The bore 17 of the barrel 16 is screw-threaded at 23 for insertion, and tight fitment, therein of a shut-off device or ring 24, Figs. 8 and 9; said ring conveniently having a pair of diametrically opposed holes 25, 26, the purpose whereof will be later explained; while said ring is driven firmly into the screw-threaded bore 23 to prevent its working loose.

Referring again to the controller section or chuck 22, the same embodies an externally screw-threaded section 27, a taperingly reduced forward portion 28 and a milled section 28' for grippage purposes; while it also is provided with a pair of diametrically opposed longitudinal ducts 29, 30, for movement into, and out of, alignment with the shut-off ring holes 25, 26, as hereafter fully explained.

The bore of the chuck 22 includes an inner cylindrical section 31, an intermediate screw-

threaded portion 32, a forward cylindrical relatively reduced section 33, and a front tapering end 34 which in effect constitutes a grippage.

The pen or writing point 35, Figs. 4 and 5, is preferably made of gold, or other ink non-corrosive material, such as stainless steel, plastic, aluminum, etc., to embody a tubular portion 36 and a tapering section 37, fitted with an iridium tip 38. The tapering section 37 and tip 38 are preferably, although not essentially, cross-cut diametrically at right-angles to impart a degree of flexibility thereto, and to better insure such factor the cross-cuts 39 are extended beyond the point of meeting 40 of the taper 37 with the exterior surface of the tubular portion 36, whereby said cross cuts not only permit flow of ink to the tip 38 but likewise allow air to enter the pen barrel 16.

For the adjustment of the point section 35 to vary and control the writing of fine or coarse characters, words, etc., use is made of an adjuster member 41, Figs. 6 and 7, said member being in the form of a feeder bar having a comparatively fine axial bore 42 and its edges screw-threaded at 43 for engagement in the correspondingly-threaded section 32 of the chuck 22. This adjuster-member 41, as readily understandable from Fig. 2 coacts with the inner end of the writing point 35 and, by an obvious turning manipulation of said member the tapering section 37 of said point may be contractively-influenced to diminish outlet of ink through the tip 38; or by a reverse turning movement of the adjuster member 41 the point 35 will be automatically expanded and move axially relative to the chuck 22 incidental to the previously imposed compressive action exerted on the section of said point superimposed by the cross-cuts 39.

To fill the fountain pen 16 use is preferably made of the means shown in Figs. 14 and 15, the former figure showing a perspective of a well known type of ink-bottle 44 having a screw-cap 45, to which I conveniently apply a fine outlet tubular spout 46, and a small rubber ball-valve 47 having an air inlet 48. Now it will be quite obvious that by effecting a slight turn of the controller section 22 to move the ducts 29, 30 therein into registration with the holes 25, 26 of the shut-off ring 24, that the outlet spout 46 may be introduced into either of the ducts 29 or 30—29 for example—and the pen replenished or filled by pressure on the ball-valve 47, while the other duct—30 for instance—serves for expelling of any contained air in the pen barrel 16. When the pen is filled pressure of the finger or thumb on the ball-valve 47 is released and the flow of ink via the spout 46 be immediately arrested, while a slight reverse turn of the controller section 22 completes the operation without any "messing" of the fingers and the pen will be found exteriorly dry and clean, or ready for instant use.

In the modification of Fig. 15, a pin-hole 48 is provided in the cover or cap 45 in lieu of the ball-valve 47, and will be found in practice equally efficient.

For carrying the improved fountain pen I preferably use the device 49 of Figs. 12 and 13, the same consisting of a truncated springy material element, coiled to define tapering grips 50 into either of which the pen 16 can be slipped point upwards; while said device 49 is readily securable in the pocket or to the desired part of the wearing apparel by means of an attached safety pin 51 in an obvious manner. Use of the device eliminates the development of frayed pockets, while holding the same lengthwise in a most desirable manner for easy withdrawal and replacement.

While there has been disclosed herein what is deemed to be a preferable embodiment of the invention, it is to be understood the same is non-limitative, inasmuch as the details may be variously modified to suit differing types of fountain pens; all such changes and variations being included as come fairly within the scope of the following claims.

Having thus described my invention, I claim:

1. In a fountain pen the combination of streamlined ink barrel having a tapering forward end, a tubular control section rotatively engaged in said forward end and having longitudinal ducts through the wall thereof, a shut-off device in the barrel-bore having holes therethrough for coaction with the control section to effect filling of the pen, a writing-point having longitudinal cross-cuts at right-angles extending from its tip into an inner bore portion of said writing point, and means whereby said point is forwardly adjustable to regulate the ink flow in opposition to the flexibility of said point set-up by the cross-cuts therein.

2. The combination of claim 1 wherein the ink barrel is made of transparent material, is of polygonal cross-section, and the forward end is curvilinearly reduced lengthwise towards the outer end.

3. The combination of claim 1 wherein the control section embodies an outer taperingly reduced portion, an intermediate exteriorly-milled section, an inner screw-threaded part for engagement in the pen barrel bore, and diametrically opposed filler and air flow ducts respectively provided lengthwise through the wall of the control section.

4. The combination of claim 1 wherein the shut-off device is in the form of an annulus having a surrounding screw-thread for firm engagement with a complemental thread in the bore of the pen barrel, and a pair of diametrically opposed holes are provided through the annulus for the purposes specified.

5. The combination of claim 1 wherein the writing point embodies a tubular rear part, a tapering forward section, an iridium tip, and cross-cuts at right angles to one another provided from said tip lengthwise of the writing point into the tubular part to impart a minor degree of flexibility thereto for the purpose specified.

6. The combination of claim 1 wherein the writing point adjuster means is in the form of a feeder bar having an axial bore, and a screw thread for coaction with a corresponding thread in a bore of the control section.

WILLIAM G. NICHOL.