Aug. 11, 1931. O. FEDERBUSCH 1,818,216

FOUNTAIN PEN

Filed July 17, 1929

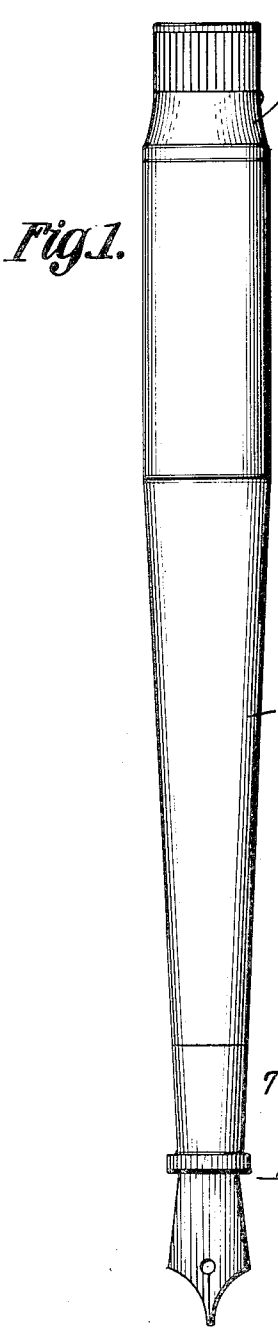


Fig.1.

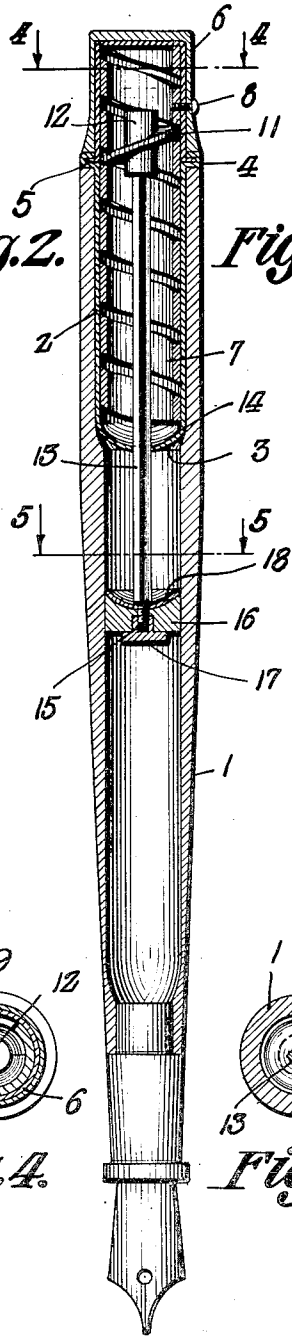


Fig.2.

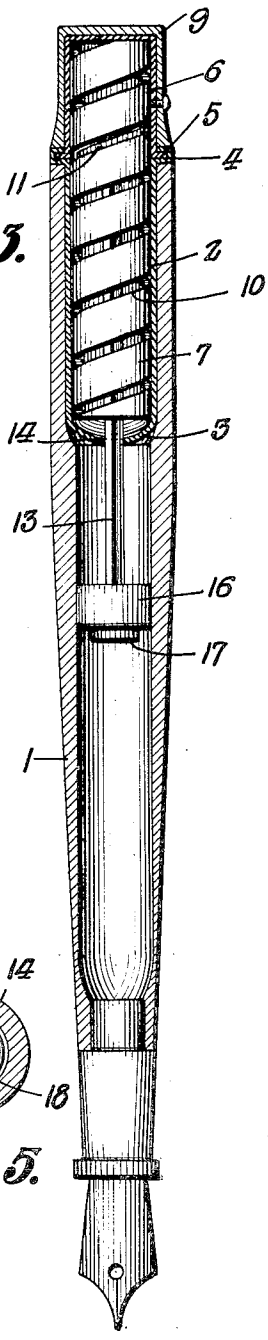


Fig.3.

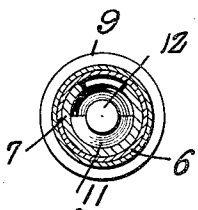


Fig.4.

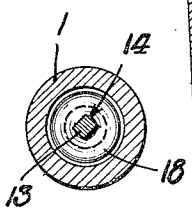


Fig.5.

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# UNITED STATES PATENT OFFICE

OSCAR FEDERBUSCH, OF ARNOLD, PENNSYLVANIA, ASSIGNOR OF TWENTY-FIVE PER CENT TO MAURICE H. CLASTER AND TWENTY-FIVE PER CENT TO LOUIS CLASTER, OF ARNOLD, PENNSYLVANIA

## FOUNTAIN PEN

Application filed July 17, 1929. Serial No. 379,000.

My present invention has reference to an improved construction of fountain pens, my object being the provision of a fountain pen that will obviate the employment of the usual ink sack and the lever mechanism for compressing the sack when the pen is to be filled and to employ in lieu thereof a plunger which is moved longitudinally in the barrel of the pen body upon the turning of the cap on said barrel, and consequently to present a simple, but strong and sturdy structure which contains no parts that are liable to breakage or disorder and wherein the pen may be filled in an easy and expeditious manner and the barrel, being relieved of the sack, will contain a greater quantity of ink than fountain pens of the ordinary construction.

To the attainment of the foregoing and other important objects which will present themselves as the nature of the invention is better understood, the improvement also resides in further novel features of construction, combination and operative association of parts, one satisfactory embodiment of which is disclosed by the accompanying drawings.

In the drawings:

Figure 1 is a side elevation of a fountain pen in accordance with this invention.

Figure 2 is an approximately central longitudinal sectional view therethrough.

Figure 3 is a substantially similar section but showing the spirally wound tube in elevation.

Figure 4 is a sectional view on the line 4—4 of Figure 2.

Figure 5 is a sectional view on the line 5—5 of Figure 2.

The barrel 1 of my improved fountain pen is of the ordinary construction and is formed of gutta-percha or like material. The barrel, of course, carries the usual pen nib at one of its ends and its second end is open. I arrange in the open end of the barrel a sleeve 2, the said sleeve being fixed in the barrel in any desired manner. The inner end of the sleeve is rounded or concaved, as at 3, and this end of the sleeve is provided with a squared opening. The end of the sleeve which overlies the outer end of the barrel 1 is flanged thereover, is continued outwardly therefrom and from thence bent inwardly to provide a hollow ring 4. The ring is designed to receive in the groove thereof an annular outstanding flange 5 formed upon the inner and open end of a metal tubular member 6. The tube 2, it should be stated is also constructed of metal.

I arrange in the bore of the alining tubes 2 and 6 a spirally wound sleeve 7. This sleeve is fixed to the sleeve member 6 either by frictional engagement therewith or through the medium of an element 8. This element 8 also passes through the cap member 9 of the improvement, the said cap member being arranged over the tube 6 and the cap member is roughened or knurled to permit of the turning thereof.

Designed to be received between the openings 10 formed by the spirally wound sleeve 7 there are oppositely disposed spiral fingers 11 formed on a head 12. The fingers 11 are really in the nature of teeth. From the head 12 there is extended a stem 13. The stem is square in cross section and passes through the square opening 14 in the concaved end 3 of the tube section 2. The sleeve is received in the bore of the barrel and has its end reduced and threaded, as at 15. This threaded end passes through an opening in a compressible disc plunger 16, and there is screwed in the plunger and also screwed on the end 15 of the stem 13 the reduced end of a cap nut 17. The second or outer end of the plunger 16 is dished and has arranged thereon a dished washer 18 that is contacted by the squared end of the stem 13.

From the foregoing description when read in connection with the drawings it will be noted that by turning the cap member 9 in one direction a simultaneous turning will be imparted to the sleeve section 6 and to the spirally wound tube 7 which will cause the fingers or teeth 11 on the stem or plunger 16 to be moved longitudinally in the barrel. When the barrel is to be filled with ink the pen nib is inserted in an ink containing well or the like and the cap member is turned until the plunger is moved to approximately its lowermost position in the barrel. There-

after the cap member is turned in a reverse direction which will draw the plunger in the barrel in the direction of the cap member, causing the said plunger to suck ink into the barrel.

As previously stated, the barrel of my improvement will contain more ink than fountain pens of an ordinary construction and it will be noted that the device is of an extremely simple nature which may be cheaply manufactured or marketed and contains no parts that are liable to breakage or disorder.

Having described the invention, I claim:

1. A fountain pen having a tube secured in the outer end of the barrel thereof, an annulus at the outer end of said tube, a second tube having a flange engaging said annulus, a spirally slotted sleeve within the tubes and fixed to the second tube, said first-mentioned tube having its inner end provided with a non-circular opening, a non-circular stem received through the opening and having means thereon engaging the spiral slot in said sleeve, and a plunger secured to the inner end of the stem.

2. A fountain pen having a tube secured in the outer end of the barrel thereof, an annulus formed in the outer end of the tube, a second tube having an outwardly directed continuous flange received in said annulus, a cap member surrounding said second tube and fixed thereto, a spirally wound sleeve disposed in said tubes and fixed to said second tube, said first-mentioned tube having a substantially closed end provided with a non-circular opening, and a stem having means thereon for entering the spaces between the spirals of the sleeve and a plunger secured to the end of the stem.

3. A fountain pen including a barrel having a tube received in the outer end thereof, said tube having an inner closed end provided with a polygonal opening, a second tube axially disposed adjacent the first tube, a spirally wound sleeve received in said tubes and fixed to the second tube, a stem passing through the opening in the first-mentioned tube, a head on one end of the stem having means engaging the spirals of the sleeve and a plunger in the barrel secured to the end of the stem.

4. In a fountain pen, a barrel, a tube in the barrel having a polygonal end opening, a stem having a cross-sectional shape similar to that of said opening extending into said tube, a piston on the stem, screw means within said tube for reciprocating said stem, and a cap on said barrel for actuating the screw means.

5. In a fountain pen, a barrel, a tube fixed in the barrel, a stem adapted to enter the tube, a piston on the stem, said tube and stem having portions of non-circular cross-sectional shape to prevent relative rotation thereof, screw means within the barrel for reciprocating said stem, and a cap on the barrel for rotating said means.

6. A fountain pen comprising a barrel, a tube seated therein, a plunger reciprocable in said barrel and having an actuating rod extending into said tube, said tube and rod having cooperating non-circular portions to prevent relative rotation thereof, screw means for moving said actuating rod, and a cap on the barrel for turning the screw.

7. In a fountain pen, the combination with a barrel, a sleeve fixed therein and a plunger reciprocable in the barrel, of an actuating rod for the plunger extending into the sleeve, the rod and sleeve having portions with cross-sectional shapes of similar regular polygons, for preventing relative rotation thereof, a screw for moving the rod, and a cap on the barrel for turning the screw.

In testimony whereof I affix my signature.

OSCAR FEDERBUSCH.