

July 10, 1934.

G. L. BASSETT

1,965,626

TWISTING FILLER PEN

Filed Feb. 9, 1934

Fig. 1

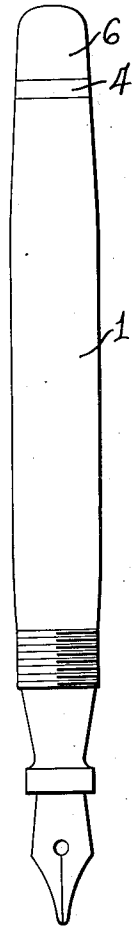


Fig. 2

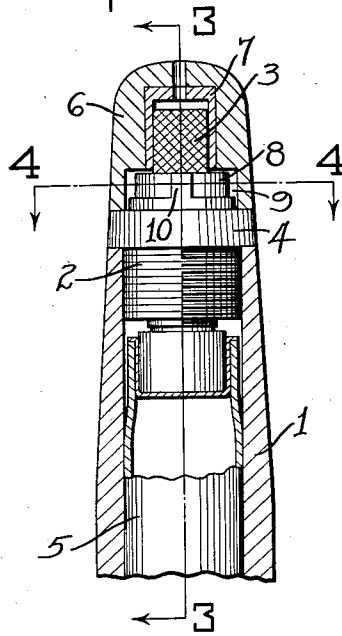


Fig. 3

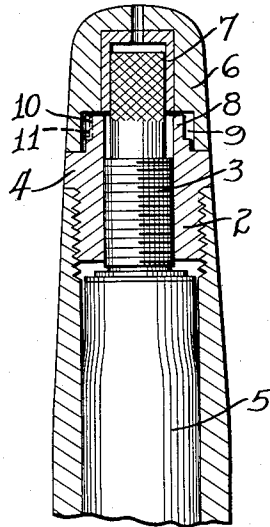
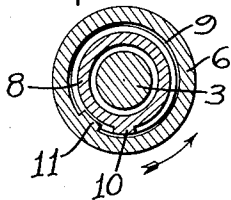


Fig. 4



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UNITED STATES PATENT OFFICE

1,965,626

TWISTING FILLER PEN

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Application February 9, 1934, Serial No. 710,448

4 Claims. (Cl. 120—46)

This invention relates to fountain pens, and particularly to those of the twisting filler type.

In pens of this type, a rotatable control member for the twisting operation is provided on the barrel end and has threaded connection therewith, so that the application of a continued turning force on the member, after it has reached a holding position, causes such a frictional binding of the parts as in many cases to quite effectually lock them against reverse turning or releasing movements, except by the application of suitable tools, thus, in many instances, necessitating returning the pen to the factory for such purpose.

The object of the invention is the provision, in combination with a pen of this character, of simple and efficient means to permit a tightening of the control member relative to the pen barrel to resist a turning of the member under light pressure, and at the same time to prevent such a tightening thereof as to, in effect, lock the parts together.

The invention is fully described in the following specification, and one embodiment illustrated in the accompanying drawing, in which—

Figure 1 is a side elevation of a pen embodying the invention; Fig. 2 an enlarged fragmentary elevation of the rear end portion of the pen, with parts in central longitudinal section; Fig. 3 is a section on the line 3—3 in Fig. 2, with parts in full, and Fig. 4 is a cross-section on the line 4—4 in Fig. 2.

Referring to the drawing, 1 designates the barrel of a pen with which the invention is associated, and 2 a plug which is preferably threaded in the rear end of the barrel and cooperates with a stem 3, threaded axially therethrough, to close the barrel end. The plug 2 is provided near its outer end with an annular flange 4 for shouldered abutment against the barrel end, such flange preferably corresponding in peripheral shape and size to that of the barrel.

The stem 3 is attached in any suitable or convenient manner to the rear end of a twisting filler member 5, the forward end of which is anchored in the barrel and open to the forward filling end of the pen, as well understood in the art, so that a turning of the stem from normal position will effect a twisting of the member 5 to exhaust air therefrom preparatory to releasing the stem and permitting an untwisting of the member and a consequent suction action through the filling end of the barrel.

The outer end of the stem 3 projects beyond the outer end of the plug 2 and has a control knob or cap 6 fixed thereto in any suitable manner.

For instance, the cap 6 is usually formed of hard rubber, or other suitable non-metallic material, which has a metallic member 7 molded therein and into which member the end of the stem has a pressed fit, as shown. The outer end of the plug 2 has a centrally disposed axial projection 8, which is reduced in diameter relative to the flange 4. The cap 6 has its bottom provided with a recess 9 to freely receive the plug extension 8 and to permit the inner end edge portion of the cap to seat against the adjacent side of the plug flange 4 when the cap is screwed home.

A more complete showing and description of a pen of this character is contained in United States Letters Patent No. 1,937,107, issued November 28, 1933, to Andreas Bienenstein.

In carrying out the idea of the present invention, the side edge of the plug extension 8 and the inner side wall of the cap recess 9 are provided with coating stop lugs 10 and 11, respectively, which serve to stop a turning of the cap 6 at predetermined points in either direction relative to the plug 2. The faces of the lugs 10 and 11, which engage to stop a relative tightening or screwing home movement of the cap 6 and plug 2, are so disposed as to have stop coaction before the parts have been sufficiently tightened to effect such a binding thereof as to, in effect, lock the parts against untwisting movements without the use of tools, and, at the same time, to permit a sufficient tightening thereof as to prevent a too free untwisting movement of the cap.

The molded materials, from which pen barrels and coating filler parts are customarily made, are of a more yielding nature than metal, and it, therefore, frequently happens that the twisting control cap 6 is turned into such binding engagement with the member on which it seats that the parts cannot be separated without danger of breaking or by the use of suitable tools for such purpose. The purpose of the present invention is to provide a safe tightening limit for the control member, which will prevent what may be termed a locking coaction of the parts, and at the same time permit a sufficient frictional binding of the parts to accomplish the normal holding tension desired. The relative positions of the stop lugs when the cap and plug are in very slight frictional binding engagement is indicated in Fig. 4, the arrow indicating the locking direction of movement, and shows that the lug 11 on the cap has still some movement to go before it comes into stop coaction with the lug 10, and such stop coaction is effected before the cap

has been tightened sufficiently on the plug 2 to effect a so-called locking engagement thereof.

It is preferable to have the threaded connections between the plug 2 and barrel 1 and between the stem 3 and plug 2 of reverse order, so that a tightening of the cap 6 will tend to loosen rather than to tighten the plug in the barrel.

I wish it understood that my invention is not limited to any specific construction, form or arrangement of the parts, as it is capable of numerous modifications and changes without departing from the spirit of the claims.

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

1. In a pen of the class described, a barrel, a twisting filler stem in threaded connection with the barrel, a cap fixed to the outer end of the stem and adapted to frictionally seat against a barrel part, and means including coacting stop portions on the barrel and cap permitting limited relative turning movements thereof and effecting a stopping of the home turning movement of the cap after it has frictional binding engagement with the barrel part and before such binding engagement has become sufficient to substantially lock the cap against unturning movements relative to the barrel.

2. In a pen of the class described, a pen barrel, a plug threaded in the rear end of the barrel and having a peripheral flange seating against the barrel end and an outer end extension restricted with respect to the flange, a twisting filler stem threaded through said plug, a control cap fixed to the outer end of the stem and adapted to have seating engagement against said flange

and having a recess for receiving said plug extension, and coacting stop lugs provided on said extension and the side wall of said recess for stopping the home turning movement of the cap after it has engaged the plug and before such engagement has become sufficient to prevent a comparatively easy unscrewing of the cap.

3. In a pen of the class described, a pen barrel, a twisting filler stem in threaded connection with the barrel, a control cap carried by the stem and adapted to seat against a barrel part in one direction of turning of the cap and stem, said barrel and cap each having a single stop lug which lugs coact to positively stop the turning of the cap at predetermined points in both twisting and un-twisting movements thereof relative to the barrel, also said lugs being adapted to permit an easily releasable binding engagement of the cap and coacting barrel part and prevent a locking engagement thereof in one direction of turning movement of the cap relative to the barrel.

4. In a pen of the class described, a pen barrel, a plug attached to the rear end of the barrel, a twisting filler stem threaded through said plug axially of the barrel, a cap fixed to the outer end of the stem and adapted to frictionally seat against the plug, each of said plug and cap having a stop thereon adapted to coact to permit limited relative turning movements thereof in each direction and effecting a stopping of the home turning movement of the cap after it has frictional binding engagement with the plug and before such binding engagement has become sufficient to substantially lock the cap against unturning movement relative to the plug.

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