Jan. 5, 1932. T. D. WALKER 1,839,817

FOUNTAIN PEN

Filed July 23, 1926

Fig. 1.

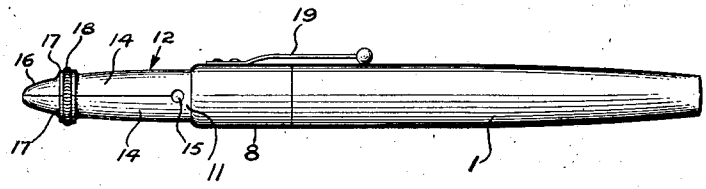


Fig. 2.

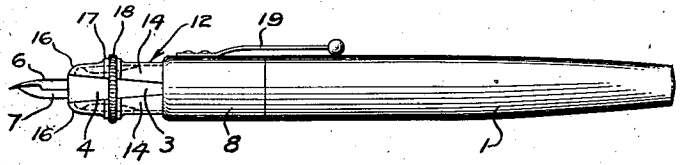


Fig. 3.

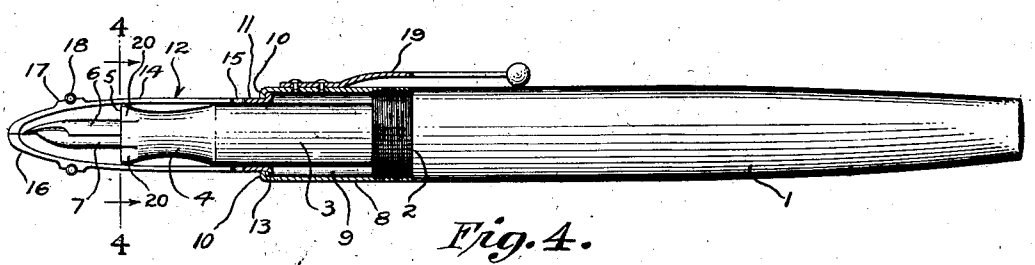
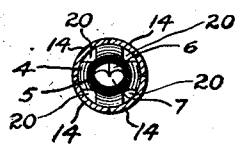


Fig. 4.



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UNITED STATES PATENT OFFICE

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FOUNTAIN PEN

Application filed July 23, 1926. Serial No. 124,501.

This invention relates to protective means for a comparatively delicate portion of an implement, and is particularly suitable for use in connection with fountain pens, though it is to be understood that the invention is applicable to other devices, the utility and convenience of which will be considerably increased by the employment of the invention in connection with them.

Hitherto it has been customary to provide fountain pens with a cap, which is slipped over the writing end of the chirographical implement, in order that the pen may be carried in a pocket or a lady's purse without injury to the nibs of the pen proper. Serving this useful purpose during the period of non-use of the pen, the removal of the usual cap at once raises the question of what to do with it while the pen user is engaged in writing. The manufacturers of fountain pens adopted the simple expedient of shaping the reverse end of the pen barrel so as to permit the removed cap to be slipped over it and frictionally retained thereon.

It is a purpose of the present invention to provide a protective closure for the pen end of the fountain pen, which closure does not require the detachment of a cap, which frequently is laid upon a desk, from which, in many instances, it is accidently brushed to become lost, and sometimes broken.

A further advantage of my improved closure is that it avoids the necessity of slipping a cap over the permanently closed end of the pen, when the latter is in use, thereby eliminating the bunchy effect on the pen barrel, which so commonly produces a sense of annoyance to the pen user.

Ease of conversion from a non-use to a ready-for-use condition of the fountain pen, and vice versa, furnishes a high degree of convenience, and is so easily effected that, where occasion makes it desirable, the change may be accomplished by manipulation of the closure with one hand, leaving the other free for a different use, if this be desirable.

Other features and advantages appearing hereinafter are, of course, to be understood as coming within the scope of the present invention as defined by the appended claims.

In the drawings, Fig. 1 shows the improved fountain pen in closed condition;

Fig. 2 is a similar view showing the fountain pen ready for use;

Fig. 3 is an enlarged view partially in section, showing the elements of the closure housing the pen; and

Fig. 4 is a section taken on the line 4—4 of Fig. 3.

Referring now to the drawings, 1 indicates the barrel of the fountain pen which may be of any approved form except for its formation near its pen bearing end. Toward this end there is a threaded portion 2 of slightly less diameter than the adjacent plain portion of the barrel 1. Extending beyond the threaded portion 2 the barrel is of considerably reduced diameter forming a neck 3. The major portion of the neck 3 is cylindrical, but toward its outer end has inwardly and then outwardly curving formation, as at 4, this portion terminating in a mouth 5 inserted in which is the usual pen 6 and ink feeding means 7.

Screwed onto the threaded portion 2 of the barrel of the fountain pen is a cap housing 8, which has a threaded portion engaging the portion 2 of the barrel and an otherwise substantially smooth bore forming a chamber 9, there being an inwardly directed annular flange 10 at the outer end of the cap housing. Surrounding the cylindrical portion 3 of the neck of the barrel is the inner end 11 of a slidable sleeve generally designated 12. The portion 11 of the slidable sleeve is in the nature of a complete band having an outwardly directed flange 13 at its inner end. The slidable sleeve 12 further comprises a plurality of sections 14, which may be conveniently formed by drilling holes 15 circumferentially of the slidable sleeve 12 and providing slits from the nose 16 of the slidable sleeve to the holes 15. In this manner the sections 14 normally constitute petals. which by reason of the inherent qualities of the material of which the sleeve 12 is made tend to remain in intimate relation to each other. Such relationship is further maintained by providing each of the petals or sections 14 with a spring seat 17, a coil

spring loop 18 encircling the slidable sleeve 12 and resting in each of the spring seats 17.

Reference to Fig. 3 shows that the outwardly directed flange 13 of the slidable sleeve 12 engages the inwardly directed flange 10 of the cap housing 8, when the slidable sleeve is in its closed position. At such times the pen is in its out-of-use condition and may be carried in the pocket in the usual way, and if desired, with the aid of a spring clip 19 fastened to the cap housing 8 in the usual manner.

It being desired to use the fountain pen, the barrel 1 is grasped in a convenient manner so that two or more of the smaller fingers will encircle the barrel in a gripping fashion, leaving the fore finger and thumb free to reach forward and grasp the slidable sleeve 12 at some convenient point. This may well be the protuberance formed by the spring seats 17 and the spring 18, so that an inward drawing of the thumb and fore finger retracts the slidable sleeve 12 until it is in the position indicated in Fig. 2. As this action transpires, the annular flange 13 of the sleeve 12 travels inwardly through the chamber 9 between the cap housing 8 and the neck 3 of the fountain pen. Full withdrawal of the sleeve 12 will bring the annular flange 13 thereof into contact with the shoulder formed at the outer end of the threaded portion 2 of the pen barrel. The slidable sleeve 12 is composed of material which is sufficiently hard to possess all the qualities of a protective shell, but possesses a sufficient degree of flexibility to permit such deformation of each of the petals or sections 14 to conform it substantially in the cylindrical form of the neck 3 of the pen barrel. Thus the petals 14 open and straighten to whatever degree is necessary as the sleeve 12 is slid to expose the pen 6, as shown in Fig. 2. In its open position, the slidable sleeve 12 is acted upon by stresses due to the flexible property of material of which it is formed and the restricting action of the exterior of the neck 3 and the wall defining the inner diameter of the flange 10 of the cap housing 8, as well as the bearing of the petals 14 against the mouth edge of the open end of the barrel 1 under the influence of the spring loop 18. The slidable sleeve 12 is accordingly under sufficient stress to cause it to remain in its open position without further attention. The outer end of the curved portion 4 is preferably plurally notched at 20 adjacent to the mouth 5, whereby the tips of the petal sections 14 are so received in the notches when the sleeve 12 is retracted, that a smooth contour is preserved. When the slidable sleeve 12 is in its pen-closing position, its inherent spring quality seeks to close the petals 14, and is further assisted in so doing by the spring loop 18.

While the invention has been described as being applied to a fountain pen, it will be readily appreciated that there are numerous other delicate instruments which have working edges that it is desirable to protect, or to be protected from, when such other implement is out of use. In many of such cases the delicate or dangerous element may be protected substantially in the same manner as the pen proper illustrated in the drawings, and it is, therefore, to be understood that my invention is applicable in all instances where such a closure is suitable.

I claim:

1. An implement having a main body portion, an element for work performance projecting therefrom, and a closure adapted to house or expose said element reversely movable longitudinally of said body portion and comprising a tubular portion and normally closed separation resisting petal-like sections integral with said tubular portion, said petal-like sections being adapted to flex transversely of said body portion as the closure is moved longitudinally thereof.

2. An implement having a main body portion, an element for work performance projecting therefrom, and a closure adapted to house or expose said element reversely movable longitudinally of said body portion and comprising a tubular portion and normally closed separation resisting petal-like sections having mutually related ends integral with said tubular portion and free ends movable transversely of said body portion into and out of intimate correlation by the longitudinal movement of the closure, and elastic means correlated only with said free ends and additionally influencing said sections toward their closed position.

3. In a fountain pen, a barrel, a pen projecting therefrom, and a closure slidable longitudinally of said barrel comprising a tubular portion and normally intimately correlated separation resisting flexible sections integral with said tubular portion and movable transversely of said barrel as the closure is moved longitudinally thereof to house or expose said pen.

4. In a fountain pen, a barrel, a pen projecting therefrom, a closure slidable longitudinally of said barrel comprising a tubular portion and normally intimately correlated flexible sections integral with said tubular portion, said flexible sections mutually fitting to form a housing for said pen and opening away from each other by flexure upon certain longitudinal movement of the closure.

5. In a fountain pen, a barrel, a pen projecting therefrom, a closure slidable longitudinally of said barrel, stops limiting the movement of said closure, said closure comprising a plurality of normally intimately correlated flexible sections and a displace-

able barrel-engaging portion integral with and joining said sections at one end, said sections mutually fitting and housing said pen when said closure is moved in one direction and withdrawing and being deflected from said pen upon movement of the closure in another direction.

6. In a fountain pen, a barrel, a pen projecting from an end thereof, and a closure comprising a portion retentively and slidably engaged with a portion of said barrel and normally intimately correlated flexible sections integral with and extending from said portion and shaped to mutually fit and form a closed housing shell around said pen and the adjoining end of said barrel, movement of said closure longitudinally of said barrel in one direction housing said pen and in the opposite direction exposing the same and flexing said sections.

7. In a fountain pen, a barrel, a pen projecting from an end thereof, a closure comprising a portion retentively and slidably engaged with a portion of said barrel and normally intimately correlated flexible sections integral with and extending from said portion and shaped to mutually fit and form a closed housing shell around said pen and the adjoining end of said barrel, movement of said closure longitudinally of said barrel in one direction housing said pen and in the opposite direction exposing the same and flexing said sections, and constricting means additionally urging said flexible sections toward mutual intimate relation as they approach a pen-housing position.

8. In a fountain pen, a barrel having an externally threaded portion and a neck portion of less diameter projecting therebeyond, a pen projecting from said neck portion, a shell screwed onto said threaded portion and forming a chamber between itself and said neck portion, and a closure telescopically mounted between said neck portion and shell to slide toward opposite ends of said chamber, said closure comprising flexible sections shaped to form a closed housing for said pen and to bend and slide toward one end of said chamber to uncover said pen.

9. In a fountain pen, a barrel having an externally threaded portion and a neck portion of less diameter projecting therebeyond, a pen projecting from said neck portion, a shell screwed onto said threaded portion and forming a chamber between itself and said neck portion, and a closure telescopically mounted between said neck portion and shell to slide toward opposite ends of said chamber, said closure comprising flexible sections shaped to form a closed housing for said pen and to bend and slide toward one end of said chamber to uncover said pen, said shell and closure being provided with stops limiting the movement of said closure.

10. In a fountain pen, a barrel having an externally threaded portion and a neck portion of less diameter projecting therebeyond, a pen projecting from said neck portion, a shell screwed onto said threaded portion and forming a chamber between itself and said neck portion, and a closure telescopically mounted between said neck portion and shell to slide toward opposite ends of said chamber, said closure comprising flexible sections shaped to form a closed housing for said pen and to bend and slide toward one end of said chamber to uncover said pen, said shell, barrel and closure being formed to establish stops limiting the movement of said closure.

11. In a fountain pen, a barrel having a neck portion of reduced diameter, a pen projecting from said neck portion, a shell affixed to said barrel and co-acting with said neck portion to form a chamber between itself and said neck portion, and a slidable closure telescopically mounted between said neck portion and shell and having a portion continuously in said chamber, means associated with said barrel, shell and the portion of the closure that is continuously in said chamber to limit the movement of said closure, said closure having flexible sections shaped to house said pen and to be pushed into said chamber to expose the same.

12. In a fountain pen, a barrel having a neck portion of reduced diameter, a pen projecting from said neck portion, a shell rigidly combined with said barrel and forming a chamber between itself and said neck portion, and a closure slidable over said neck and having flexible sections shaped to house said pen and the adjacent part of said neck portion, said closure being adapted to be retracted so as to move inwardly of said chamber during which movement said sections contact with said neck portion and shell so as to be bent away from said pen.

13. In a fountain pen, a barrel having a neck portion of reduced diameter, a pen projecting from said neck portion, a shell rigidly combined with said barrel and forming a chamber between itself and said neck portion, a closure slidable over said neck and having flexible sections shaped to house said pen and the adjacent part of said neck portion, said closure being adapted to be retracted so as to move inwardly of said chamber during which movement said sections contact with said neck portion and shell so as to be bent away from said pen, and constricting means urging said sections into intimate relation as said sections move into a pen-housing position.

14. A writing implement having a marking device, and a closure therefor comprising a portion retentively and slidably engaging said implement and normally closed separation resisting flexible petal-like sections integral with said retentive and slid-

able portion and being adapted to bend laterally in assuming an open position.

15. A writing implement having a marking device, and a closure therefor comprising a portion retentively and slidably engaging said implement and normally closed separation resisting flexible petal-like sections integral with said retentive and slidable portion and being movable longitudinally of the implement to house and expose the marking device and flexing during such longitudinal movement.

In testimony whereof I affix my signature.

THEODORE D. WALKER.