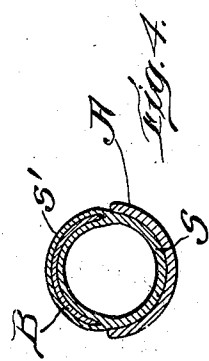
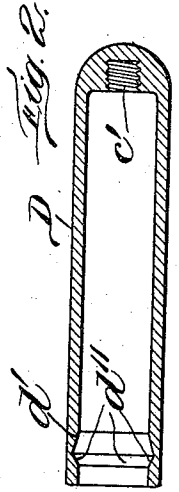
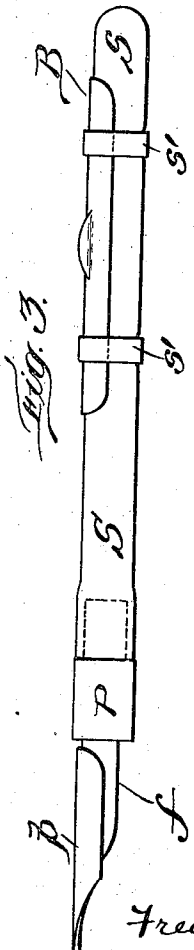
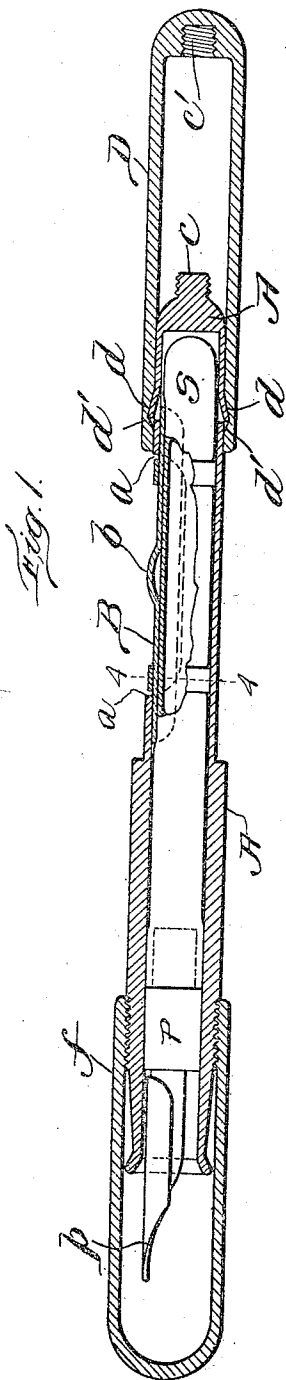


1,247,169.

Patented Nov. 20, 1917.



Inventor:
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UNITED STATES PATENT OFFICE.

FREDERIC E. STORER, OF SOMERVILLE, MASSACHUSETTS, ASSIGNOR TO DAVIDSON RUBBER COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

FOUNTAIN-PEN.

1,247,169.

Specification of Letters Patent.

Patented Nov. 20, 1917.

Application filed February 16, 1917. Serial No. 149,081.

To all whom it may concern:

Be it known that I, FREDERIC E. STORER, a citizen of the United States, residing at Somerville, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Fountain-Pens, of which the following is a specification.

My invention is an improvement in fountain pens, more particularly applicable to that class of fountain pens known as "self-filling" pens, in which the ink is contained in a flexible and resilient rubber sack within the hollow handle or "fount" of the pen.

In the drawings:

Figure 1 is a central, longitudinal section of a fountain pen embodying my improvements;

Fig. 2 is a longitudinal section of the sleeve;

Fig. 3 is a detached view of the pen feed, ink sack and presser bar, organized together; and

Fig. 4 is a cross section on line 4-4 of Fig. 1, on an enlarged scale.

In self-filling fountain pens in which a soft rubber, collapsible ink sack is employed to receive and contain the ink, as is well known, the filling has been accomplished by collapsing the soft rubber sack and inserting the pen point into an ink supply and then allowing the soft rubber sack to expand and draw in a supply of ink through the pen point and feed bar. Numerous ways and means have hitherto been employed to effect the collapsing of the ink sack and to control its subsequent expansion, and one of the most simple and effective of such ways and means has been to form an aperture through the wall of the hollow handle or "fount" of the pen, in which the ink sack is contained, so that the sack could be reached by the finger of the user through the aperture and the sack collapsed and then allowed to expand. In order that this method might be successfully employed it was necessary to provide means by which the pressure of the finger upon one part, near the middle of the length of the sack, could be made effective throughout its length and also to provide means by which the aperture in the wall of the handle might be closed after the sack had been filled, to the end that the filled sack might not, by accident, be collapsed, and its contents thus ejected. I have provided, to assist the fin-

ger of the user in collapsing the ink sack, when desired, an improved presser bar, which is mounted in connection with the ink sack in a novel and useful manner, and I have also provided means for closing the aperture in the handle and for keeping it closed, when not in use.

In the drawings, I have shown a fountain pen provided with my devices, in which A is the fount or handle, having an aperture, *a* therethrough. The pen section P, carries the feed bar, *f*, and the writing point or pen *p*. To the inner end of the pen section is secured the open mouth of the soft rubber ink sack S, all in the well known manner. Along that side of the sack S which is directly beneath the aperture, *a*, when the parts are assembled, I secure a presser bar B, which is disposed longitudinally of the sack S, and extends from near the rear or inner closed end, almost to the point of connection of the sack with the pen section P. Directly beneath the aperture, *a*, I form in or on the presser bar a protuberance or finger piece, *b*, with which the finger of the user may engage and thus make it possible to give the most effective pressure to the ink sack.

The means hitherto employed to fix and maintain the presser bar B, in proper relation with the sack S, have generally involved levers or links connecting the bar with some fixed part of the handle and serving to hold the presser bar in the desired position with regard to the ink sack and aperture. In my improved pen the presser bar is positioned most effectively by cementing upon the sack one or more retaining bands or patches, *s'*. The presser bar B is preferably curved in cross section and it is preferably formed of thin, stamped metal. To secure the bar B in proper position, the bar is forced between the band or patch *s'*, and the sack, the band being disengaged in the act from the surface of the sack for a space sufficiently wide to permit the passage of the bar and the result is that the bar is held accurately in engagement with the sack by a means as simple as it is economical and efficient.

It will be obvious that after the sack, S, has been filled with ink, it will be a practical necessity that aperture, *a*, shall be covered to prevent an accidental pressure upon the sack, S, from discharging ink from the sack.

This has heretofore been accomplished by fitting upon the handle or barrel of the pen, an outer sleeve, to be moved longitudinally of the barrel to expose the aperture or to be
 5 moved in the opposite direction to close or cover the aperture. In order that this sleeve should satisfactorily perform its function, it has been necessary to fit it with some care, in order to insure a fit which would be tight
 10 or close enough to cause the sleeve to retain its position, wherever it was set and at the same time to be loose enough to permit the sleeve to be shifted as desired, with reasonable ease. This "fitting" was a troublesome
 15 minor problem of fountain pen manufacture and relatively expensive in consequence. I obviate this difficulty and expense by providing means to positively lock the sleeve, D, in operative position, so that it is no longer
 20 necessary to take great trouble about an accurate frictional fit between the sleeve D and the handle, fount or barrel A. To this end I form upon the rear end of the barrel A a short, screw threaded extension, *c*, and
 25 in the inner surface of the closed end or head of the sleeve I form a cooperating screw threaded recess, *c'*. When the sleeve D is mounted upon the barrel A by passing it on to the rear end, it is of such a length
 30 that the sleeve will pass over the aperture, *a*, as the extension, *c*, engages the recess, *c'*. The sleeve being turned axially the parts *c*, *c'*, screw together and the sleeve D is advanced. Obviously, unless the sleeve is axi-
 35 ally rotated it cannot be moved longitudinally to uncover the aperture, *a*. In operation the sleeve D is thus normally locked in position and is only unlocked and retracted when it is desired to fill the pen. In order
 40 to connect the sleeve D with the barrel A in such fashion that the sleeve cannot be easily removed, I form within the sleeve D an annular groove, *d'*, preferably shaped in cross section, substantially as appears in Fig.
 45 2, and upon the outer surface of barrel A, at a suitable position, as indicated, I form an outstanding, flexible finger *d*, preferably integral with the barrel A, the free and up-
 50 standing end of the finger pointing toward the pen end of the barrel.

It will be observed that one wall, *d''* of the groove *d'* is at a considerable angle to the axis of the sleeve, and it is this wall that is engaged by the finger *d* when the sleeve is retracted to uncover aperture, *a*. The wall
 55 *d''* is of such an angle that it serves as a stop for the sleeve in cooperation with the finger *d*, but still permits the sleeve to wedge the finger down if sufficient force is applied, when it is desired to disassemble the parts. 60

While I have described the two elements of the screw-thread sleeve-locking device in a specific manner, illustrating what I conceive to be the best and most economical
 65 form, it is obvious that the idea of means could be embodied in other specific forms, in which the outer surface of the handle is provided with screw threads and the inner surface of the sleeve with corresponding
 70 threads; to engage and cooperate, after the main movement of the sleeve has been effected by a sliding movement, the screw threads being utilized merely for locking purposes and being disengaged during a
 75 great part of the movement of the sleeve.

I claim:

In a fountain pen, the combination of a hollow handle, having an aperture in one side thereof; a flexible and resilient tongue
 80 fast upon the handle between the aperture and the rear end of the handle; a flexible and resilient ink sack within the handle and beneath the aperture; a sleeve of a length to cover the rear end of the fountain and the
 85 aperture therein and closed at the rear end, mounted upon the handle with a close sliding fit and having a circumferential groove within near the open end and a threaded recess in the closed rear end thereof; a threaded
 90 boss upon the rear end of the hollow handle; all organized to cause the tongue upon the handle to engage the circumferential groove within the sleeve and stop the sleeve when the sleeve is withdrawn to in-
 95 operative position and to cause the threaded boss and recess to engage when the sleeve is advanced to operative position.

Signed by me at Boston, Massachusetts, this 15th day of February, 1917.

FREDERIC E. STORER.