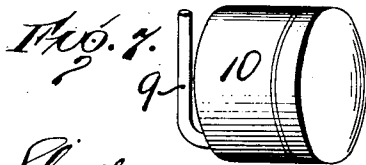
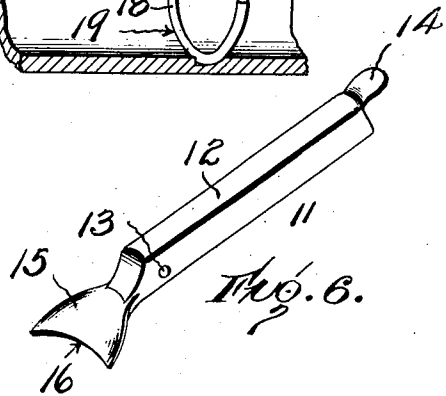
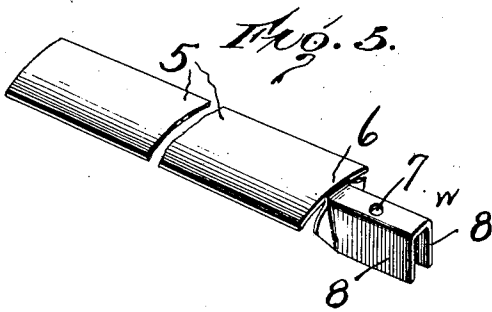
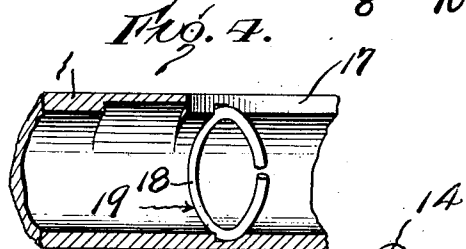
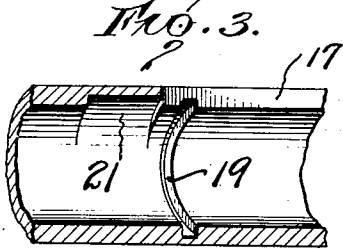
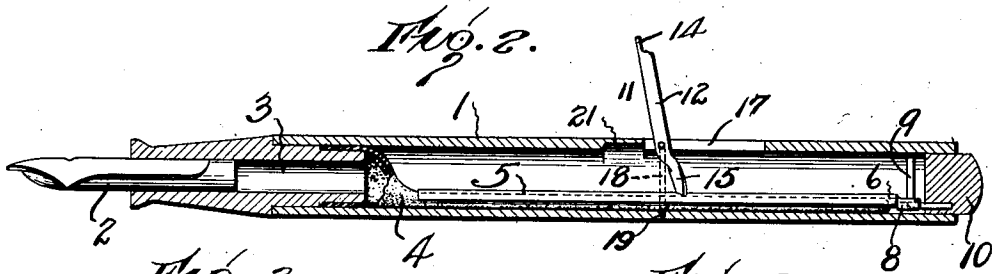
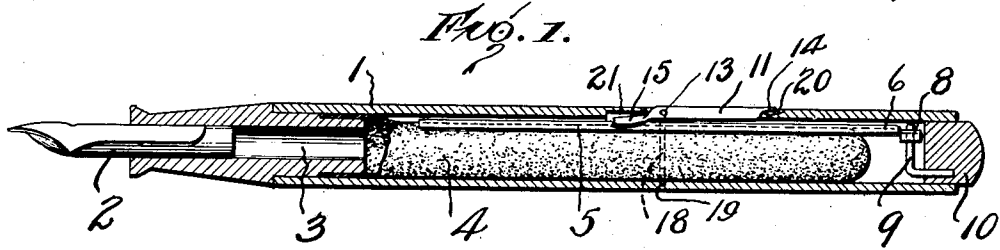


P. E. WIRT.
 FOUNTAIN PEN.
 APPLICATION FILED MAY 11, 1917.

1,347,800.

Patented July 27, 1920.



Witness

Emory Buff

By

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UNITED STATES PATENT OFFICE.

PAUL E. WIRT, OF BLOOMSBURG, PENNSYLVANIA.

FOUNTAIN-PEN.

1,347,800.

Specification of Letters Patent.

Patented July 27, 1920.

Application filed May 11, 1917. Serial No. 167,964.

To all whom it may concern:

Be it known that I, PAUL E. WIRT, a citizen of the United States, residing at Bloomsburg, in the county of Columbia and State of Pennsylvania, have invented certain new and useful Improvements in Fountain-Pens, of which the following is a specification.

This invention relates to fountain pens, and more particularly to improvements in pens of the self-filling type.

To this end, the invention has generally in view a novel and practical construction for controlling the ink container for the refilling operation, which is simple, reliable and thoroughly efficient in its action. That is to say, the invention has primarily in view, a novel form and arrangement of parts which greatly improve and strengthen the facilities for collapsing the rubber ink sack in pens where a soft rubber container is employed.

A further and more specific object of the invention is to provide a novel depressing lever having a special mounting in the casing which is more durable and substantial than mountings heretofore employed, and further form the inner end of the lever in such a manner that it has an extended engagement with the press bar to better retain the latter in place when the rubber sack is collapsed. Heretofore, depressing levers have been retained in or upon the pen casing by means of a small metal pin driven through the walls of the case or holder. This, however, affords a weak and fragile anchorage, or hinging point, for the depressing lever, because the hard rubber casing, on account of its thinness usually breaks away and causes the parts to separate. Aside from the insubstantial character of this means of mounting the depressing lever, it discloses an unsightly pin which mars the ornamental effect of the exterior of the casing.

Another object of the invention is to provide a simple and effective construction which is susceptible of a practical commercial embodiment and form, and which may be easily and quickly assembled, thus enhancing the value of the improvements from a manufacturing standpoint.

With the above and other objects in view which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction,

combination and arrangement of parts hereinafter more fully described, illustrated and claimed.

A preferred and practical embodiment of the invention is shown in the accompanying drawings, in which—

Figure 1 is a longitudinal sectional view of a fountain pen, embodying the present improvements, and showing the ink sack in its normal condition.

Fig. 2 is a view similar to Fig. 1 showing the depressing lever in operative position and the ink sack collapsed.

Fig. 3 is an enlarged detail sectional view showing more clearly the groove for receiving the ring upon which the depressing lever is hinged, and the clearance for the inner end of the depressing lever.

Fig. 4 is a view similar to Fig. 3 showing the hinged ring in its groove.

Fig. 5 is a detail perspective view showing more clearly the guide end of the presser bar.

Fig. 6 is a detail perspective view of the depressing lever, clearly showing its novel bearing end which engages with the presser bar.

Fig. 7 is a detail perspective view of the end cap which carries the guide pin for the presser bar.

Similar reference characters designate corresponding parts throughout the several figures of the drawings.

As previously indicated, the present invention is particularly adapted to pens of the self-filling type, which usually employ a collapsible rubber ink sack, and to this end there is shown in the drawings a pen including the usual hard rubber barrel or casing 1 having at one end thereof the pen feeder 2, which is in communication with the ink-feed channel 3 that leads to the collapsible ink container or sack 4.

Referring now to the novel means for deflating or collapsing the rubber ink sack or container 4, it will be observed that a presser bar 5 of special construction is provided. This presser bar preferably extends substantially the entire length of the ink sack 4, and is curved in cross-section to correspond to the tubular form of the sack, while one end 6 thereof is formed with special means for retaining and holding the same in horizontal position throughout its depressing movement. As will be seen from

the drawings, the end 6 of the presser bar is provided with a centrally located guide pin receiving opening 7, and the depending parallel guide flanges 8, which cooperate to provide an extended bearing engagement with the opposite sides of the angle pin 9 carried by the closure plug 10 fitted in the end of the barrel opposite the pen 2. That is to say, while the hole 7 in the web portion *w* of the presser bar receives the pin 9, the guide flanges 8 slidably engage the sides of the pin to provide exceptionally effective means for guiding the presser bar in its movement without rocking, since the said flanges are spaced only a sufficient distance to allow free clearance for the pin 9. The provision of these flanges thus prevents canting, tilting or rocking of the presser bar upon the pin as would occur if the presser bar were simply provided with a hole or opening, or in other words, the depending flanges 8—8 act as stays to insure the uniform operating movement of the presser bar to prevent the same from presenting an edge to the rubber sack, and otherwise materially assist in compelling the presser bar to move in its required plane.

To further assist in the proper movement of the presser bar, the novel depressing lever 11 is employed. This lever preferably comprises a body portion 12 having therein a pivot opening 13 and provided at one end with lifting tongue 14, and at its other end with a presser bar engaging member 15. This presser bar engaging member 15 of the lever 11 is preferably flared, as shown in Fig. 6, and laterally curved in the same manner as the presser bar 5, so that the same conforms to the shape of the presser bar and lies closely upon it when the parts are in their normal condition, as shown in Fig. 1. Furthermore, this formation of the engaging member 15 provides a curved presser bar engaging edge 16 which provides an interlocking engagement between the intermediate portion of the presser bar and the depressing lever, whereby the presser bar is restrained from a swinging movement on the pin 9, and further compelled to follow its normal path of movement in the barrel or casing 1. Also, owing to the shape of the end 15 of the depressing lever, the latter is prevented from riding or slipping from side to side upon the presser bar, and furthermore tends to keep the same in proper horizontal position whenever the lever is operated. It is essential in collapsing the soft rubber sack that the presser bar move up and down upon the same without deflecting laterally or longitudinally thereof, so that as full compression as possible is obtained, and there is no wedging or binding of the presser bar in its operation.

The depressing lever 11 is mounted in its operative position in a slot 17 in the casing

or barrel 1, by means of a spring metal ring 18, which is preferably split and of somewhat larger diameter than the interior of the casing employed. This ring passes through the pivot opening 13 in the body 12 of the presser bar 11, and is held in place within the casing by means of a retaining groove 19, clearly shown in Fig. 3 of the drawings. This groove 19 is countersunk in the inner wall of the casing, so that when the spring ring 18 is fitted therein, the latter does not occupy any of the space within the casing, permitting all of the latter to be utilized by the sack or container 4. Thus, it will be apparent that the presser bar 11 is hinged upon the spring ring 18 which is inserted in the keeper groove 19, thereby doing away with the necessity of inserting a pin through the relatively thin casing, where it would have an insubstantial mounting.

Referring further to other refinements of the invention, it will be observed that the exterior of the barrel or casing 1 is provided at one end of the slot 17 with a clearance depression 20 for receiving the lifting end 14 of the depressing lever when the same is in the position shown in Fig. 1, while the interior wall of the casing is provided at the opposite end of the slot with a clearance 21 for accommodating the presser bar engaging end 15 of the depressing lever. This feature of the invention therefore enables the presser bar 11 to occupy a minimum amount of space, in fact, no more space than the thickness of the walls of the casing, whereby the interior diameter of the casing may be utilized to its maximum extent for the accommodation of the ink sack 4, thereby in no way reducing or affecting the capacity of the latter.

From the foregoing, it is thought that it will be apparent that the present invention provides novel means for collapsing the ink sack, whereby the presser bar is given a uniform movement to accomplish the necessary deflation of the tube to expel the air therein, and furthermore, provides novel means for mounting the depressing lever, which not only assists in keeping the presser bar in its proper relation to the tube or sack, but also materially strengthens the hinging facilities for the lever itself. While these are the more pertinent features of the present invention, it is thought that other features will be readily apparent, and it will, of course, be understood that various changes in the form, proportion, and minor details of construction, may be resorted to without departing from the spirit of the invention or scope of the appended claims.

I claim:

1. An operating unit for the ink sack of self-filling fountain pens including a guide pin carried by the pen casing, a presser bar

for the sack having an extended bearing engagement with the opposite sides of the pin, and a depressing lever for the presser bar.

5 2. An operating unit for the ink sack of self-filling fountain pens including a guide pin carried by the pen casing, a presser bar for the sack having a guide opening and guide flanges at one end for providing an extended bearing engagement with the sides
10 of said pin, and a depressing lever for said presser bar.

3. An operating unit for the ink sack of self-filling fountain pens including a guide pin carried by the pen casing, a presser bar

for the sack having an opening at one end 15 for receiving the guide pin and also having the edge portions thereof at each side of said opening struck downwardly in parallel relation to provide an extended non-rocking bearing engagement between the bar and 20 pin, and a depressing lever for said presser bar.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

PAUL E. WIRT.

Witnesses:

C. W. FUNSTON,

D. M. GIGER.