

P. E. WIRT.
 FOUNTAIN PEN.
 APPLICATION FILED JUNE 30, 1920.

1,379,890.

Patented May 31, 1921.

Fig. 1.

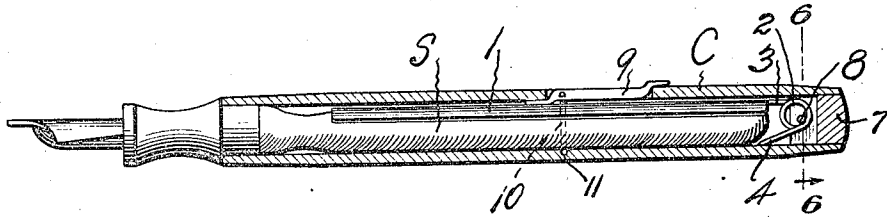


Fig. 2.

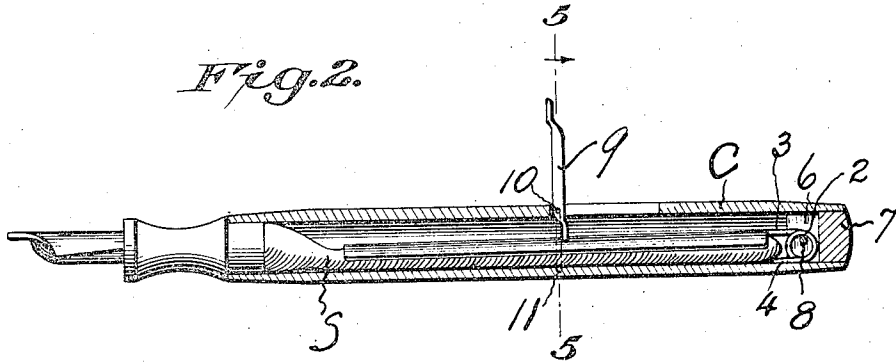


Fig. 3.

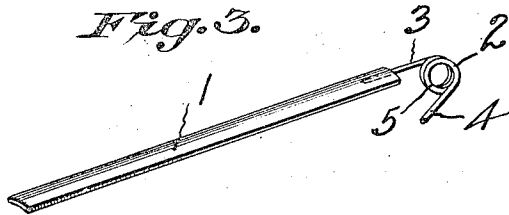


Fig. 4.

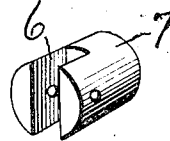


Fig. 5.

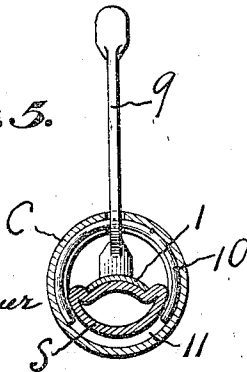
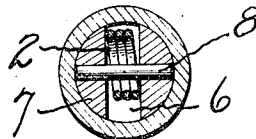


Fig. 6.



WITNESSES:-

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UNITED STATES PATENT OFFICE.

PAUL E. WIRT, OF BLOOMSBURG, PENNSYLVANIA.

FOUNTAIN-PEN.

1,379,890.

Specification of Letters Patent.

Patented May 31, 1921.

Application filed June 30, 1920. Serial No. 393,134.

To all whom it may concern:

Be it known that I, PAUL E. WIRT, 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 has particular reference to a novel improvement in the means for facilitating the deflation of the ink sack.

A primary object of the invention is to provide a resiliently mounted press-bar element which may be placed under even compression throughout its length by reason of a special mounting which permits the same to move more freely under the action of the depressing lever and with a greater amplitude of movement whereby an easier and more complete rear end motion of the press-bar may be obtained to permit of the compression of the sack from end to end as fully as possible. Also, by the improved arrangement the bar when at rest, is retained at a tension against the inner surface of the case away from the sack so that same may keep its original shape, resiliency, and capacity, as fully as possible, while at the same time owing to the bar's tense pressure against the under side of the compressing lever, when the latter is not in operation, the same is held longitudinally down in its place at some tension.

A further object of the invention is to provide a construction of the character set forth wherein the bar is accurately guided in its movement in such a manner as to prevent lateral canting or rocking thereof, which might cause a side edge to be presented to the rubber ink sack and thus cut into or rupture the same.

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 pen embodying the present improvements.

Fig. 2 is a view similar to Fig. 1 showing

the position of parts when the ink sack is depressed.

Fig. 3 is a perspective view of the press-bar and operating spring,

Fig. 4 is a detail perspective view on an enlarged scale of the end plug showing the guide-way for the spring associated with the press-bar.

Fig. 5 is a cross sectional view taken on the line 5—5 of Fig. 2.

Fig. 6 is a cross-sectional view on the line 6—6 of Fig. 1.

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

As previously indicated a distinctive feature of the invention is the provision of a novel press-bar mounting, whereby the press-bar which accomplishes the deflation of the ink sack is uniformly guided in its movement to prevent lateral or longitudinal canting which might rupture or otherwise injure the comparatively delicate container.

Accordingly, as will be observed from the drawing it is proposed to provide the press-bar 1 which overlies the sack S, with a support or carrier in the form of a coiled spring 2 one arm 3 of which is rigidly and permanently secured to the rear end of the bar while the other arm 4 is free. The coiled or looped portion of the spring provides in effect an eye of relatively large diameter and presents a relatively wide guiding bearing for the spring in the slot 6 of the end plug 7 which forms a seal or closure for the open rear end of the pen casing C. It will therefore be apparent that the coiled portion of the spring 2 has a relatively free sliding movement in the said slot 6 of the closure plug so that the movement of the press-bar which is attached to one arm of the spring may move farther and more freely under the action of the depressing lever.

As shown a relatively thin retaining pin 8 may be placed, if desired in the plug 7 transversely of the slot 6 as shown in the drawings, the arrangement and thickness of the pin being such that it in no way interferes with the amplitude of movement of the loop or coil 5 of the spring. That is to say, owing to the relatively large diameter of the loop or coil the same may shift as the press bar moves without touching the pin, the latter simply acting as a loose cou-

pling between the plug and press-bar to prevent the latter moving too far longitudinally toward the front end of the casing and also facilitating withdrawal.

5 For the purpose of manipulating the press-bar 1 a suitable lever 9 may be employed, the same being carried upon a split ring hinge-element 10 which snaps into the groove 11 formed in the interior of the casing C as set forth in my Patent No. 1,347,800, dated July 27, 1920.

10 Upon the operation of the lever 9 to move or shift the press-bar 1 within the casing to accomplish the deflation of the ink sack it will be apparent that the said bar proceeds to perform its function without canting or differential movement from end to end by reason of the fact that all hinging effect at the loop of the compression spring is eliminated due to the free movement of the eye in the slot and this freedom of movement is in no way hindered by the eye engaging the pin because of the large diameter of the eye and the thinness of the retaining pin. Further-
 20 thermore, because of the guiding engagement afforded by the walls of the slot 6 the bar may be operated with greater ease and more facility while at the same time generally insuring a more efficient collapse or depression of the rubber sack throughout. In addition to the downward or collapsing movement afforded the bar by means of the open coil or loop of the spring moving up and down in its guiding slot over the small retaining pin, there is provided still greater vertical movement for the bar by the spring itself, which, when bar is operated by the lever, shortens or collapses, thereby adding to the downward movement of bar and its efficiency.

The feature of a press-bar having one end thereof rigidly and permanently secured to a looped or coiled spring 2, the free arm of which may engage with an interior casing part is especially advantageous since the free arm may have a clutching engagement with the casing or plug. That is to say, that while the pin 8 may be utilized as a retaining means for the spring 2 the same may not be necessary where the clutching effect of the free arm 4 with a casing part is sufficient to hold the loop 5 of the spring in the guide-way 6 of the closure plug. However, if the pin is of relatively small diameter as shown, it will not interfere with the movement of the spring within normal limits.

Without further description it is thought the features and advantages of the invention will be readily apparent and it will of course be understood that minor changes in the form, proportion and details of construction may be resorted to without departing from the spirit of the invention or scope of the appended claims.

I claim:

1. A press-bar mounting for fountain pens including in combination with the casing and ink sack, a closure plug having a guide slot, a resilient member carried by the press-bar and having a relatively free guiding engagement in the slot of the closure plug. 65 70

2. A press-bar mounting for fountain pens including in combination with the ink sack and casing, a plug having a guide slot and a coiled spring having one end thereof rigidly secured to the press-bar, while the loop thereof is disposed in said slot of the plug. 75

3. A press-bar mounting for fountain pens including in combination with the pen casing and ink sack, a closure plug fitted in one end of the casing and having a slot, a coiled spring having one arm thereof rigidly secured to the press bar while the loop thereof is disposed in the slot of the closure plug. 80 85

4. A press-bar mounting for fountain pens including in combination with a casing and ink sack, a press-bar, a closure plug having a slot, and a coiled spring having one arm rigidly secured to the press-bar while the loop thereof affords an extended bearing engagement with the walls of the slot in the closure plug. 90 95

5. A press-bar mounting for fountain pens including in combination with the casing and ink sack, of a closure plug having a guide slot opening across the end thereof, a press-bar carrying a resilient member having the intermediate portion thereof operating within the slot of the closure plug. 100

6. A press-bar mounting for fountain pens including in combination with the casing and ink sack, of a closure plug fitting in one end of the casing and having a guide slot, a press-bar, a coiled spring having one end thereof rigidly secured to the press-bar and the coiled portion of said spring lying within the guide slot of the plug, and a retaining pin arranged transversely of the guide slot and passing through the coil of said spring. 105 110

7. In a fountain pen, the casing having a member provided with a guide, an ink sack, a press-bar, an operating device for the press-bar, and a folded spring having a relatively loose guiding engagement with said guide and also having one member thereof rigidly connected with the press-bar while its other member bears against the casing part. 115 120

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

PAUL E. WIRT.

Witnesses:

C. W. FUNSTON,
D. M. GIGER.