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W. E. GUYOT

REFILL MECHANISM FOR FOUNTAIN PENS

Filed March 17, 1923

Fig. 1.

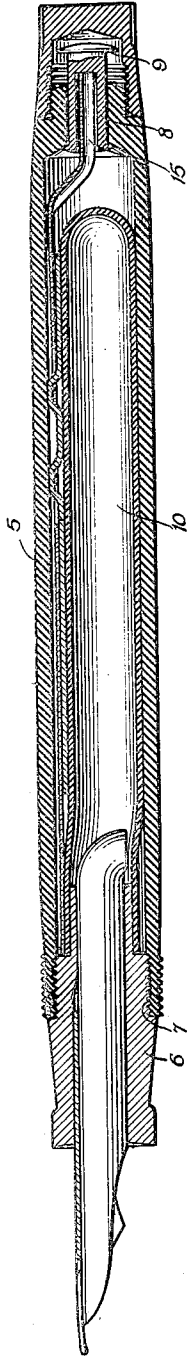


Fig. 2.

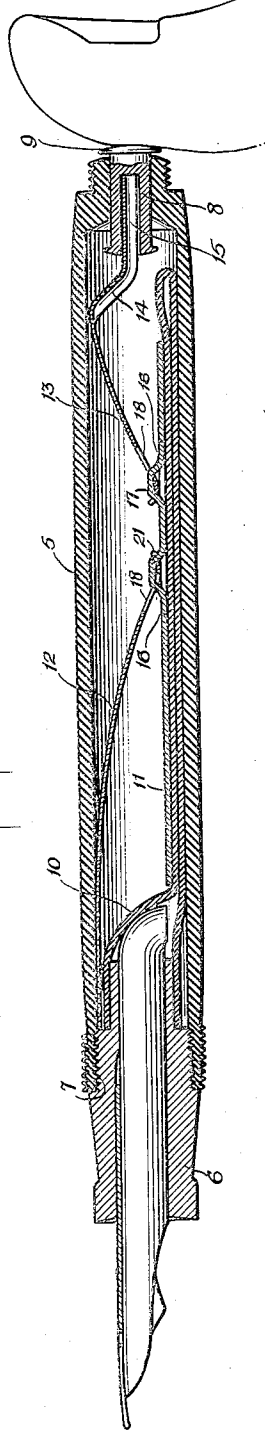


Fig. 3.

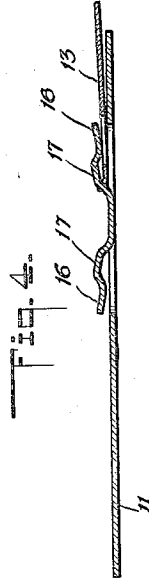
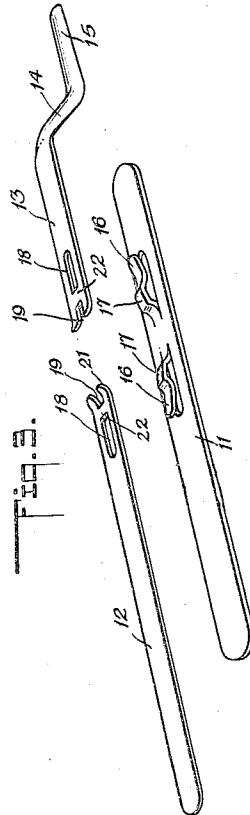


Fig. 4.



WITNESSES

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REFILL MECHANISM FOR FOUNTAIN PENS.

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To all whom it may concern:

Be it known that I, WALTER E. GUYOT, a citizen of the United States, and a resident of Janesville, in the county of Rock and State of Wisconsin, have invented a new and Improved Refill Mechanism for Fountain Pens, of which the following is a full, clear, and exact description.

The present invention relates to new and useful improvements in fountain pens and it pertains more particularly to a refill mechanism therefor.

It is one of the objects of the present invention to provide a mechanism of the presser-bar type for collapsing the sac of a fountain pen for the purpose of filling said sac with ink.

It is a further object of the invention to construct a sac-collapsing mechanism which can never assume the position of dead center.

It is a further object of the invention to construct the mechanism so that it may be formed from heavy metal therefore rendering the device particularly adaptable for use with relatively heavy sacs.

It is a further object of the invention to construct the mechanism in such a manner that the presser bar has a pivotal connection with the resilient members, which pivotal connection permits of a limited amount of sliding movement between the resilient members and the presser bar, thus adapting the device to fountain pen barrels of various lengths and removing the necessity of absolute accuracy in its manufacture.

It is a further object of the invention to provide a mechanism in which the spring will have an inherent tendency to straighten without relying upon the action of the sac for this feature.

It is a further object of the invention to construct the mechanism so that in lieu of one spring as is commonly employed, a plurality of spring elements is provided.

With the above and other objects in view, reference is had to the accompanying drawings, in which—

Figure 1 is a longitudinal sectional view of a fountain pen equipped with the new and improved sac-collapsing mechanism, the latter being shown with the sac in extended position;

Fig. 2 is a similar view showing the

mechanism in the position which it assumes when the sac is collapsed thereby;

Fig. 3 is a disassembled perspective view of the sac-collapsing mechanism;

Fig. 4 is a longitudinal sectional view showing the manner in which the parts of the sac-collapsing mechanism are assembled.

Referring more specifically to the drawings, the reference character 5 designates the fountain pen barrel, and 6 the neck, which in the type shown has screw-threaded engagement, as at 7, with the barrel 5. Slidably mounted in the ordinary manner in the rear end of the fountain pen barrel 5, is a hollow plunger, or the like, 8, provided with a presser button 9, which extends beyond the barrel as shown. Carried by the neck 6 and mounted interiorly of the barrel 5, is the ink reservoir 10 and said reservoir is preferably of the ordinary construction which consists of a collapsible rubber sac.

The reference character 11 designates the presser bar, 12 designating one of the resilient elements adapted to operate the presser bar, the other resilient element being shown at 13. The resilient element 13 has an offset portion 14, and projecting from said offset portion 14 is an end member 15, which is arcuate in cross sectional form. This end member 15 is adapted to be received within the hollow plunger 8, as shown in Figs. 1 and 2. The presser bar 11 is provided with two oppositely-disposed tongues 16, preferably struck from the body portion thereof, and during the operation of striking out said tongues 16 the metal which constitutes said tongues is stretched and each tongue is formed with an arched portion 17. Each of the resilient members 12 and 13 is provided with an elongated cut-out portion 18, and these elongated cut-out portions 18 are adapted to receive their respective tongues of the presser bar 11 when the several parts are assembled. Each of the resilient members 12 and 13 is provided with a bifurcated end 19 and the furcations of each of said bifurcated ends are turned or bent upwardly to provide a curved bottom surface 21. By providing the elongated cut-out portions 18 and the bifurcated ends 19, it will be seen that an intervening cross-bar 22 is formed in each of the resilient members 12 and 13, and in assembling

the several parts this intervening cross bar of each resilient member is adapted to be received in the arched portion 17 of its respective tongue of the presser bar to form a pivotal mounting for its respective resilient member.

In assembling the device, the resilient members 12 and 13 are passed under their respective tongues 16 until the cross bar of each member occupies a position below the arched portion 17 of its respective tongue 16. After the parts have been so positioned, the tongues 16 are inserted into the openings which result from the formation of the tongues and are swaged into engagement with the side walls of said openings to secure the tongues in position.

This construction provides for pivotally mounting the resilient members 12 and 13, and the curved faces 21 heretofore mentioned aid the resilient members 12 and 13 in rocking about their pivotal points.

When the improved mechanism is inserted in a pen, as shown in the drawings, and the presser button 9 is depressed, the resilient members are sprung as shown in Fig. 2, and due to their pivotal connection with the presser bar, said presser bar is at all times in position parallel with the longitudinal axis of the barrel 5 of the pen, thus serving to give a complete collapsing of the sac 10 for the purpose desired.

Due to the inherent tendency of the resilient members to resume their normal position and the pivotal connection between these members and the presser bar, as soon as pressure is released from the presser button 9, the mechanism assumes its normal position under the influence of the resilient members rather than under the influence of the fluid entering and filling the sac.

From the foregoing it is apparent that the present invention provides a new and improved pressure mechanism for fountain pens, and that such mechanism has advantages over that type of mechanism wherein the resiliency is obtained from a single re-

silient member to which the presser bar is rigidly connected as by rivets or the like.

What is claimed is:

1. In a mechanism of the class described, a single presser bar, and a plurality of resilient elements, said resilient elements being pivotally connected with the presser bar and having sliding movement relative thereto.

2. In a mechanism of the class described, a presser bar, a plurality of tongues struck from the body portion of said presser bar, and resilient members pivotally and slidably mounted in said tongues.

3. In a mechanism of the class described, a presser bar, a plurality of tongues struck from said bar, a plurality of resilient elements, each of said resilient elements having an elongated slot formed therein and adapted to receive its respective tongue of the presser bar to form a pivotal and sliding connection between the resilient members and the presser bar.

4. A mechanism of the class described comprising a presser bar, a plurality of oppositely disposed tongues struck from the body portion of said presser bar, a resilient member having an elongated slot adapted to receive one of said tongues to provide a pivotal and sliding connection between the resilient member and the presser bar, a second resilient member having an elongated slot adapted to receive the other of said tongues to provide a pivotal and sliding connection between the second-mentioned resilient member and the presser bar, and an offset portion formed on one of said resilient members, as and for the purpose set forth.

5. In a mechanism of the character described, a presser bar, and resilient members pivotally connected to said presser bar, the pivotal connection of said resilient members being positioned between the ends of the presser bar and permitting of limited sliding movement of all the parts.

WALTER E. GUYOT.