

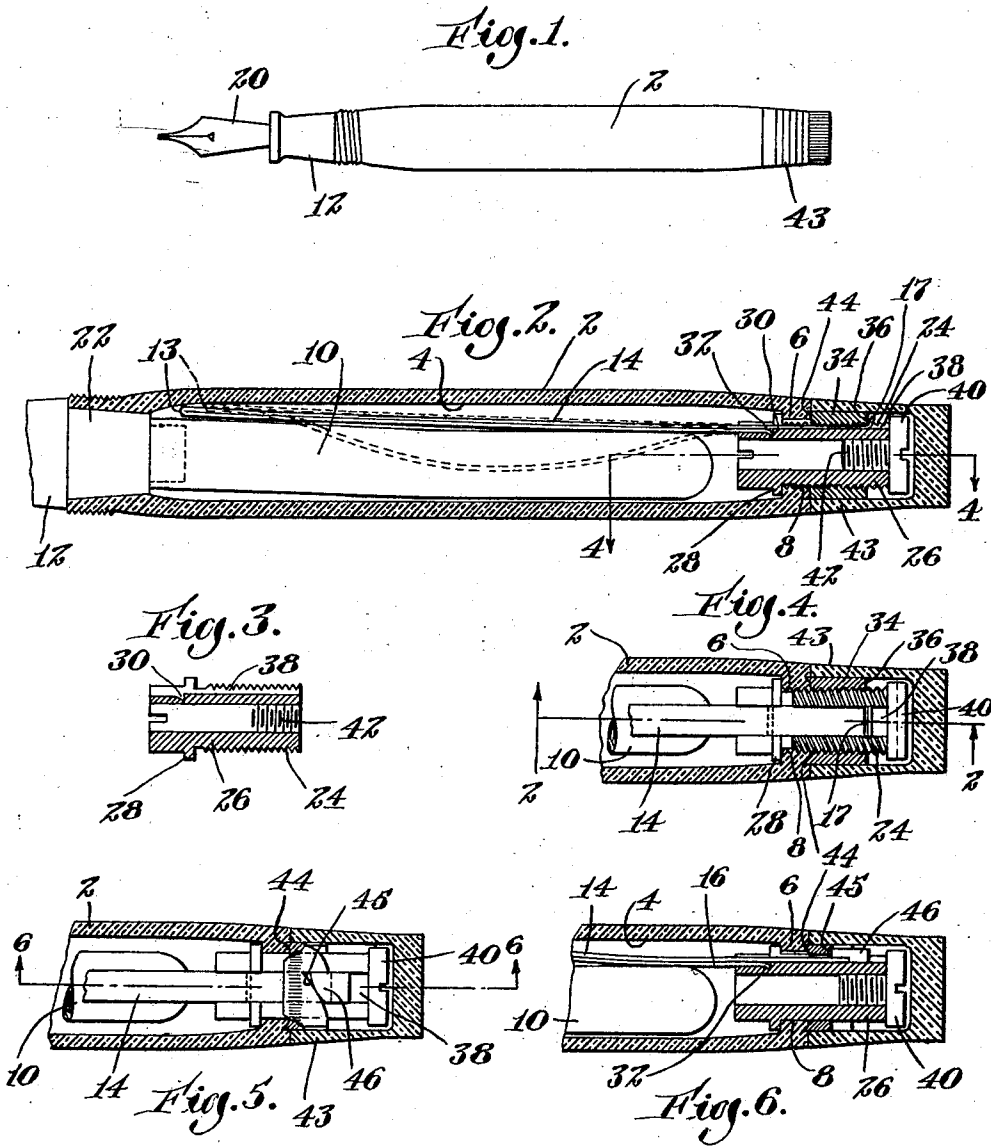
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FOUNTAIN PEN

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FOUNTAIN PEN.

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The present invention relates to fountain pens, and more particularly to pens of the self-filling variety, provided with ink bags and compressing means for the same.

5 The purpose of compressing the ink bag is to drive out the air therefrom. This permits a new supply of ink to be sucked into the bag when it is returned to its normal shape. The compressing means usually comprises a leaf spring that is longitudinally disposed
10 within the barrel and that is movable transversely thereof in one direction to compress the bag and in the opposite direction to release it. One end of the spring is usually actuated by a cam at one end of the barrel and the other end of the spring engages against a section that carries the pen point. The continual operation of the spring has a tendency to force the pen point section out of the
15 barrel.

It is accordingly an object of the present invention to improve upon present-day pens of the above-described character, to the end that their construction may be rendered more
20 simple and in order to do away with the tendency in the above-described pens to force the pen-point section out of the barrel.

With this object in view the invention consists of the fountain pen a preferred embodiment of which is hereinafter described, illustrated in the accompanying drawings and defined in the appended claims.

In the drawings, Fig. 1 is an elevation of a pen constructed according to a preferred embodiment of the present invention; Fig. 2 is a longitudinal section, upon an enlarged scale; Fig. 3 is a section of a portion of the mechanism shown in Fig. 2, but with parts omitted for clearness; Fig. 4 is a section taken upon the line 4—4 of Fig. 2, looking in the direction of the arrows; Fig. 5 is a section similar to Fig. 4, of a modification; and Fig. 6 is a section taken upon the line 6—6 of Fig. 5, looking in the direction of the arrows.

45 The fountain pen of the present invention is shown provided with a barrel 2 having an interior side face 4 and an end face 6 provided with an opening 8, the diameter of which is smaller than the diameter of the interior face
50 4. An ink bag 10 is positioned in the barrel,

fastened at its open end to a section 12 that carries the pen 20. The ink bag is adapted to be compressed and released by a spring.

According to the present invention, the spring is reversely bent at 13 to provide two
55 arms 14 and 16. The arm 16 is shorter than the arm 14. The longer arm 14 extends through the open end 8 of the barrel and is provided with a bent-over portion 17 adapted to be engaged, as will presently be described, so as to exert a pull upon the end 17,
60 thereby causing the arm 16 to be bowed out, as shown in Fig. 2, into the bag to compress it.

The opening 8 is shown threaded in Fig. 2 to receive the threads 24 of an externally threaded sleeve 26. The sleeve is provided
65 with an annular shoulder 28 that engages the interior face of the end face 6, thereby to limit further movement of the sleeve 26. The sleeve 26 is provided with a recess 30 in which
70 is received a bent end 32 upon the arm 16. When the spring arm 14 is pulled, as before described, therefore, the recess 30 acts as a stop engaged by the end 32 of the spring
75 arm 16 forcing the arm 16 to be bowed out, as before described.

An internally threaded sleeve 34 is threaded upon the threads 24 of the sleeve 26 and its outer face 36 engages the end 17 of the spring arm 14 to pull against the spring, as before
80 described, when the sleeve 34 is threaded along the threads 24. When the sleeve 34 is threaded in one direction, the spring is pulled to cause the bag to become compressed. When the sleeve 34 is threaded in the opposite direction
85 the energy stored up in the spring arm 14 causes the spring to become straightened out once more into the full-line position of Fig. 2. During the movement of the end of the spring arm 14 in this manner, it is guided
90 in a slot 38 cut longitudinally in the sleeve 26. A screw 40 is threaded into internal threads 42 of the sleeve 26 to limit the movement of the sleeve 34. A cover 43 is secured in any desired way to the exterior face of the sleeve
95 34 so as to rotate therewith. The rotation of the cover 43 will, therefore, effect the rotation of the sleeve 34 and the actuation of the spring. The closure that is thus produced may be caused to seal the barrel ink-tight by
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providing the sleeve 34 with a sharp annular flange 44.

For clearness, the threads 24 are shown somewhat fine, but it will be understood that in practice they will be coarse enough so that one turn of the closure will serve to cause the spring to become bowed into the bag, and one turn in the opposite direction will return the spring to normal position.

According to the invention shown in Figs. 5 and 6, the sleeve 26 may be fixed in the barrel as before described, or in any other desired way, but the sleeve 34 is not caused to thread up and down on the sleeve 26, but is rotatable without moving up and down on the sleeve, and is provided with cam 45 for engaging a cooperating cam member 46 upon the end of the spring arm 14. The cam member 46 thus replaces the bent end 17 shown in Fig. 2. In other respects the operation is as above described. This modification is preferred because it provides a more rapid movement of the spring into and out of the bag.

In both modifications, it will be understood, the spring arm 16 may be provided with an intermediately secured stiff strip or pad for engaging the bag to compress it. Other modifications will readily occur to persons skilled in the art, and all such are considered to fall within the spirit and scope of the invention as defined in the appended claims.

What is claimed is:

1. A fountain pen having, in combination, a barrel having an end face and a stop, an ink bag in the barrel, a reversely bent, two-armed spring in the barrel for compressing the ink bag, one of the arms being adapted to engage the stop, and means for actuating the other arm to cause the said one arm to engage the stop and to become bowed out into the bag to compress the bag.

2. A fountain pen having, in combination, a barrel having an end face and a stop, an ink bag in the barrel, a reversely bent, two-armed spring in the barrel for compressing the ink bag, one of the arms of the spring being longer than the other and extending through the end face, the said other arm of the spring being adapted to engage the stop, and means for pulling the extending end of the longer arm to cause the shorter arm to engage the stop and the spring to become bowed out into the bag to compress the bag.

3. A fountain pen having, in combination, a barrel having interior side and end faces and having a recess, an ink bag in the barrel, a reversely bent, two-armed spring in the barrel for compressing the bag, one of the arms of the spring being longer than the other and extending through one end face, the said other arm of the spring having a portion extending into the recess, and means for pulling the extending end of the longer arm to cause the spring to become bowed out into the bag to compress the bag.

4. A fountain pen having, in combination, a tube constituting a barrel having an interior side face and having a recess near an end of the tube, a section in the barrel at the said end, an ink bag in the barrel, a reversely bent, two-armed spring in the barrel for compressing the bag, one of the arms of the spring being longer than the other and extending through the section, the said other arm of the spring having a portion extending into the recess, and means carried by the section for pulling the extending end of the longer arm to cause the spring to become bowed out into the bag to compress the bag.

5. A fountain pen having, in combination, a barrel having interior side and end faces and having a recess near an end face, an ink bag in the barrel, a reversely bent, two-armed spring in the barrel for compressing the bag, one of the arms of the spring being longer than the other and extending through the said end face and having a bent-over portion, the said other arm of the spring having a bent-over portion extending into the recess, and means engaging the first-named bent-over portion to pull the extending end of the longer arm to cause the spring to become bowed out into the bag to compress the bag.

6. A fountain pen having, in combination; a barrel; a threaded member carried by the end of the barrel; a closure member threaded on the end of the threaded member and adapted to be screwed inwardly and outwardly, said closure member adapted to seal the barrel when screwed in; an ink bag in the barrel; and means for compressing the ink bag, said means adapted to be actuated by outward screwing of the closure member and released by inward screwing of said closure member.

7. A fountain pen having, in combination, a barrel having an end face and a stop, an ink bag in the barrel, a reversely bent, two-armed spring in the barrel for compressing the ink bag, one of the arms being adapted to engage the stop, a bag-compressing strip secured to the said one arm, and means for actuating the other arm to cause the said one arm to engage the stop and to cause the strip to become pressed into the bag to compress the bag.

8. A fountain pen having, in combination, a barrel having an end face and a stop, an ink bag in the barrel, a reversely bent, two-armed spring in the barrel for compressing the ink bag, the arms being of different length, one of the arms being adapted to engage the stop, and means for actuating the other arm to cause the said one arm to engage the stop and the spring to become bowed out into the bag to compress the bag.

In testimony whereof, I have hereunto subscribed my name.

GEORGE WASHINGTON GILMAN.